



Discreet. Flexible. Hemispheric.

With the S14D FlexMount, two sensor modules featuring microphones are connected to a concealed camera housing via cables up to 2 m/6.6 ft long. Two adjacent rooms can be discreetly monitored with just one camera.



HiRes
6 Megapixel
4096 x 1536
Software zoom

Skyline
Format free
Each image format
freely definable

30 Frames/s
VGA (640 x 480)
30 F/s Mega

Virtual PTZ
Digital pan, tilt,
zoom

Backlight
Safe using CMOS
without mechanical iris

Internal DVR
Internal via Flash,
external via Network

Win/Lin/Mac
Recording
via Network on PC
up to 1 Terabyte

Microphone & speaker
Audio
bi-directional via IP,
variable framerates

SIP-Client with video
IP Telephony
Alarm notify,
cam remote control

VideoMotion
Multiple windows
precision pixel-based

-22 to +140 °F
Weatherproof
-30 to +60 °C, IP65,
no heating necessary

IEEE 802.3af
PoE
Network power
even in winter

Robust
No moving parts
fiber glass housing

MwCC/MoEasy
Licence free
Video-Management-
Software

HiRes Video Innovations

The German company MOBOTIX AG is known as the leading pioneer in network camera technology and its decentralized concept has made high-resolution video systems cost efficient.

MOBOTIX AG • D-67722 Langmeil • Tel: +49-6302-9816-103 • Fax: +49-6302-9816-190 • sales@mobotix.com



MOBOTIX Seminars

MOBOTIX offers inexpensive seminars that include workshops and practical exercises. For more information, visit www.mobotix.com > **Seminars**.

Notes And Copyright Information

Download the latest version of this manual, of the **Camera Software Manual** and the manuals for MxEasy and MxControlCenter as PDF files from www.mobotix.com (**Support > Manuals**).

All rights reserved. MOBOTIX™, MxControlCenter® and MxEasy® are internationally protected trademarks of MOBOTIX AG. Microsoft, Windows and Windows Server are registered trademarks of Microsoft Corporation. Apple, the Apple logo, Macintosh, OS X, Bonjour, the Bonjour logo and the Bonjour symbol are trademarks of Apple Computer, Inc. Linux is a trademark of Linus Torvalds. All other brands, service provision brands and logos referred to are brands, service provision brands and logos belonging to their respective owners.

Copyright © 1999–2012, MOBOTIX AG, Langmeil, Germany. Information subject to change without notice!

Additional information:
www.mobotix.com

CONTENTS

Foreword	8
The MOBOTIX Concept	10
Innovative Hemispheric Technology	12
Superior Storage Solution	16
Added Security Value	18
Cost Benefits And Technical Advantages	20
1 An Overview Of The S14 FlexMount	22
1.1 Versions and Product Characteristics:	22
1.2 Hemispheric Image Views	26
1.2.1 Overview	26
1.2.2 Details (Sample Views For One Sensor)	28
1.3 Main Advantages Of The S14 FlexMount	32
1.3.1 New Features Compared To M12-DevKit	33
1.4 General MOBOTIX Camera Functions	34
1.5 Lens Options	40
1.6 S14 FlexMount Hardware Features	42
1.7 Software Features For All Camera Modules	43
1.8 Technical Data	44
1.9 S14 FlexMount – Scope Of Delivery	46
1.9.1 S14D FlexMount – Scope Of Delivery	46
1.9.2 S14D FlexMount – Dimensions	50
1.9.3 L11 Sensor Module – Scope Of Delivery	52
1.9.4 L11 Sensor Module – Dimensions	53
1.9.5 S14M FlexMount – Scope Of Delivery	54
1.9.6 S14M FlexMount – Dimensions	58
1.10 Available Accessories	60
1.10.1 Extension For Sensor Module	60
1.10.2 Ceiling/Wall Installation Set	60
1.10.3 Connection Cable For Sensor Module	60
1.10.4 MiniUSB Cable to MiniUSB (Straight/Straight Or Straight/Angled)	60
1.10.5 MiniUSB Cable to USB A Socket	61
1.10.6 Ethernet Patch Cable For Bayonet Catch	61
1.10.7 NPA-PoE-Set	61

1.10.8	MX-Patch-Box	61
1.10.9	MX-NPA-Box	62
1.10.10	MX-GPS-Box	62
1.10.11	MX-232-IO-Box	62
1.10.12	ExtIO Function Expansion	63
1.10.13	Mx2wire+ Media Converter	63
1.10.14	Product Preview	63

2 Installation 64

2.1 Determining The Installation Position 64

2.1.1	Positioning A Hemispheric Camera	65
2.1.2	S14D FlexMount Installation Options	70
2.1.3	S14M FlexMount Installation Options	75

2.2 Before Mounting 76

2.2.1	Overview Of Cable Connections	76
2.2.2	Notes On Cable Lengths And Power Supply	78
2.2.3	Network Connection With MOBOTIX Patch Cable	79
2.2.4	Network Connection With Installation Cable	80
2.2.5	Using Sensor Modules (S14D Only)	80
2.2.6	Using The MiniUSB Cable	80
2.2.7	Using MxBus Modules	81
2.2.8	External Audio Support (Microphone/Speaker)	81
2.2.9	Replacing The MicroSD Card	82
2.2.10	Tools Required For Installation	82
2.2.11	Preparatory Steps	83

2.3 Installing The S14D FlexMount 84

2.3.1	Attaching The S14D Base Module	84
2.3.2	Attaching And Connecting The S14D Sensor Modules	85
2.3.3	Plugging In And Lifting Off Extensions	86
2.3.4	Connecting Network Cables And Additional S14D Cables	87

2.4 Installing The S14M FlexMount 88

2.4.1	Connecting Network Cables And Additional S14M Cables	88
2.4.2	Attaching The S14M Camera Housing	88

2.5 Network And Power Connection, Additional Cables 90

2.5.1	Network Cabling For S14 With Patch Cables	90
2.5.2	Network Cabling For S14 With Patch Cables	91
2.5.3	Connecting Additional Cables	93
2.5.4	PoE Variables	94
2.5.5	Power Supply Using A Switch	95
2.5.6	Power Supply When Connected Directly To A Computer	96
2.5.7	Power Supply With Power-Over-Ethernet Products	96
2.5.8	Camera Startup Sequence	97

3	Operating The Camera	98
3.1	Manual and Automatic Operation – Overview	98
3.1.1	Manually Using A Computer In The 10.x.x.x IP Address Range	99
3.1.2	Automatically Using MxControlCenter Or MxEasy	100
3.1.3	Automatically Using DHCP	101
3.2	First Images And The Most Important Settings	102
3.2.1	Manually Setting Up The Network Parameters In A Browser	102
3.2.2	First Images And The Most Important Settings In The Browser	104
3.2.3	First Images And Network Parameter Configuration In MxControlCenter	106
3.2.4	First Images And Network Parameter Configuration In MxEasy	111
3.2.5	Integrating And Displaying Cameras	112
3.2.6	Starting The Camera With The Factory IP Address	114
3.2.7	Starting The Camera With An Automatic IP Address (DHCP)	115
3.3	Virtual PTZ And Full Image Recording	116
3.3.1	Preparing The Virtual PTZ Function	116
3.3.2	Full Image Recording	118
3.3.3	Special S14 Configuration In The Browser	120
3.4	MicroSD Card Recording	130
3.4.1	Introduction	130
3.4.2	Formatting The MicroSD Card	132
3.4.3	Activate Recording	133
3.4.4	Accessing Camera Data	134
3.4.5	Deactivating The Card Memory	134
3.4.6	Using A MicroSD Card In A Different MOBOTIX Camera	135
3.4.7	Limitations On Warranty When Using Flash Storage Media	135
3.5	Configuration In The Browser	136
3.5.1	Overview	136
3.5.2	General Browser Settings	136
3.5.3	Additional Configuration Options	139
3.6	Additional Notes	140
3.6.1	Do Not Sharply Bend The Connection Cables To The Sensor Modules	140
3.6.2	Password For The Administration Menu	140
3.6.3	Permanently Deactivating The Microphone	140
3.6.4	Starting The Camera With The Factory IP Address	140
3.6.5	Resetting The Camera To Factory Settings	141
3.6.6	Activate Event Control And Motion Detection	141
3.6.7	Deactivate Text And Logo Options	141
3.6.8	Deactivating The Camera Reboot	141
3.6.9	Browser	142
3.6.10	Cleaning The Camera And Lens	142
3.6.11	Safety Warnings	142
3.6.12	Online Help In The Browser	143

3.6.13	RoHS Declaration	143
3.6.14	Disposal	143
3.6.15	Disclaimer	144



Important Notes

Electrical Installation

Electrical systems and equipment may only be set up, changed and maintained by a qualified electrician or under the direction and supervision of a qualified electrician in accordance with the appropriate electrical guidelines.

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 IP Video Door Station, 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 valid regulations and comply with these laws. MOBOTIX AG is not liable for any illegal use of MOBOTIX products.

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.

Never Remove The Dome

The MOBOTIX cameras S14D and S14M should never be operated without their preinstalled transparent domes (sensor modules S14D and housing S14M) or protective lens screens (sensor modules S14D). The camera is no longer weatherproof when operated without the domes or protective lens screens. The exposed metal ring around the lens can become extremely hot when the exterior temperature is high. Touching this ring can cause burns.



**S14D: Dual Camera System
With Dual Imaging, Giving
Up To 6 Megapixel Resolution**



**S14M: Mono Camera System
With Integrated Lens**

FOREWORD

Dear MOBOTIX customer,

Congratulations on purchasing a highly efficient and discreet premium network camera "Made in Germany." MOBOTIX is proud to present the **S14 FlexMount**, a weatherproof system (IP65), characterized primarily by sensor modules that can be flexibly mounted.

In the **S14D**, two lenses with a sensor board and a microphone are connected to the base module via a 2 m/6.6 ft long cable. The flat housing, including integrated 4 GB MicroSD card and external connectors (Ethernet, MiniUSB, MxBus, audio) can be installed discreetly and with optimal protection behind a wall or ceiling panel so that only the lenses are visible in the room. The S14D can be fitted with hemispheric day or night lenses. Two adjacent rooms can be completely secured with just one camera. Other lens versions will be available in the future (15° to 90° image angle).

S14D – one camera, two surveillance areas:
indoor entrance area (left) and outdoor entrance area (right)



Sensor modules
including status LEDs
and microphone

Double hemispheric



The **S14M** version has a hemispheric sensor module (day or night) integrated into the camera housing. The housing can be placed discreetly behind a wall/ceiling or stainless steel panel up to 6.4 mm/0.25 in thick.

S14M – Camera with hemispheric sensor module for concealed installation behind a wall or ceiling panel



HiRes 180° panorama

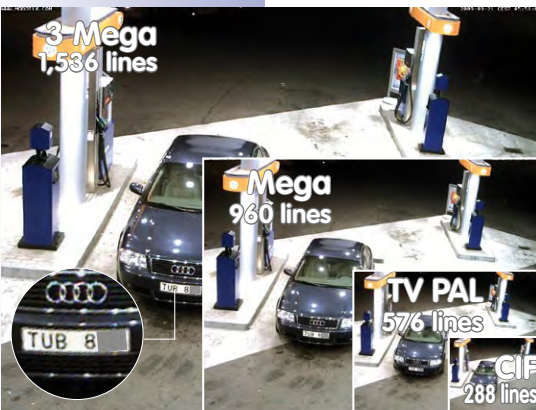
This manual starts with an overview of the innovative, decentralized MOBOTIX concept. This is followed by all the information you need to know from unpacking the camera through to performing the installation and viewing initial images on a PC.

Please see the *Camera Software Manual Part 2* for information on how to operate the camera. This is free to download as a PDF from www.mobotix.com (**Support > Operating Instructions**). The *MxEasy* and *MxControlCenter* video software can also be downloaded free-of-charge from **Support > Software Downloads**.

If you have any questions, our support staff is available at support@mobotix.com from Monday to Friday, 8 a.m. to 6 p.m. (German time).

Thank you for choosing MOBOTIX products and services. We trust you will be impressed with the performance of your new S14 FlexMount camera!

THE MOBOTIX CONCEPT



HiRes Video Innovations and Technology Leader

Since it was founded in 1999, the listed German company MOBOTIX AG has been regarded as the leading pioneer in network camera technology and its decentralized concept has made high-resolution video systems cost-efficient.

MOBOTIX has been an exclusive producer of megapixel cameras for years and is the **global leader in high-resolution video systems**.

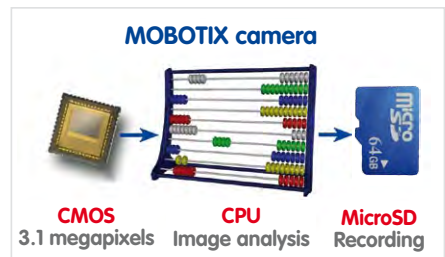
Why High-Resolution Systems?

The higher the resolution, the more accurate the detail in the image. Analog cameras generally record images of around 0.1 megapixels (CIF). **One MOBOTIX camera with 3.1 megapixels records around 30 times more**

detail. This makes it possible to record larger image areas, including 360° panorama views, while significantly reducing the number of cameras, and therefore the costs. For example, four lanes of a gas station may be recorded with one single MOBOTIX camera, instead of the four standard cameras normally required for such a task.

Disadvantages Of The Old Centralized Solution

Usually, cameras only supply images. Processing and recording take place later on a central PC using (expensive) video management software. This traditional centralized structure has too many limitations since it requires high network bandwidth and the PC processing power is insufficient when using several high-resolution cameras. An HDTV MPEG4 film already places a heavy load on a single PC, so how can it be expected to keep up with a dozen high-resolution live cameras? **Traditional centralized systems are therefore less suitable and unprofitable when compared with high-resolution systems due to the high number of PCs needed.**



The Decentralized MOBOTIX Concept

Unlike other systems, with the decentralized MOBOTIX concept, **every camera features a high-speed computer**, and, if necessary, a digital **long-term memory (MicroSD Card)** can be integrated to provide days of recording time. The PC or the video control center is required only to view and control the cameras (PTZ), not to evaluate and record video. This prevents you from having to rely on expensive, overloaded video management software because most of the important functions that require a large amount of processing power are integrated into the MOBOTIX cameras themselves.



The Benefits

MOBOTIX video solutions therefore require significantly:

- **fewer cameras** due to the more accurate detail of panoramic images with mega-pixel technology,
- **fewer recording devices** because in the decentralized system, ten times the standard number of cameras can be used to record high-resolution HDTV video with sound on one PC/server simultaneously.
- **lower network bandwidth**, because everything is processed in the camera itself and the high-resolution images therefore do not have to be constantly transported for analysis.

Robust And Low-Maintenance

MOBOTIX cameras have no mechanical motors for lenses or for movement. Without any moving parts, these cameras are so robust that maintenance is reduced to a minimum. The unique temperature range from -30°C to $+60^{\circ}\text{C}$ (-22°F to $+140^{\circ}\text{F}$) is achieved without heating or a fan at only 3 watts. Since no PC hard drive is required for recording, there are no wear parts in the entire video system.



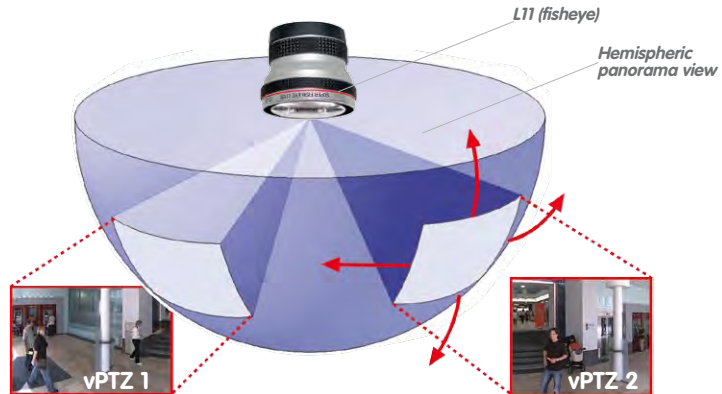
INNOVATIVE HEMISPHERIC TECHNOLOGY

The Hemispheric Camera

The primary components of a hemispheric camera include a fisheye lens, a high-resolution image sensor, and image correction software that is integrated into the camera. Using an ultra-wide angle fisheye lens, the hemispheric camera captures a 180°-hemispheric image of the room and projects it onto a high-resolution image sensor.



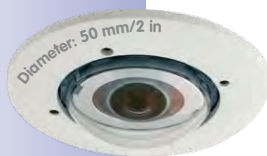
Fisheye view



When ceiling mounted, the image area of the hemispheric camera covers the entire room. The image in the hemisphere is convex, particularly near the image borders. These image sections are corrected for the viewer by the integrated distortion correction software, allowing a view of the scene from the usual perspective. The **virtual PTZ** feature allows you to enlarge or move image sections within the hemisphere just like PTZ camera, yet without the need for moving parts.

Handle Several Image Sections at Once

One or more image sections can be corrected for perspective in the hemispheric view, allowing you to monitor and record several different areas of a room **at the same time**, something that a mechanical PTZ camera is not capable of doing.



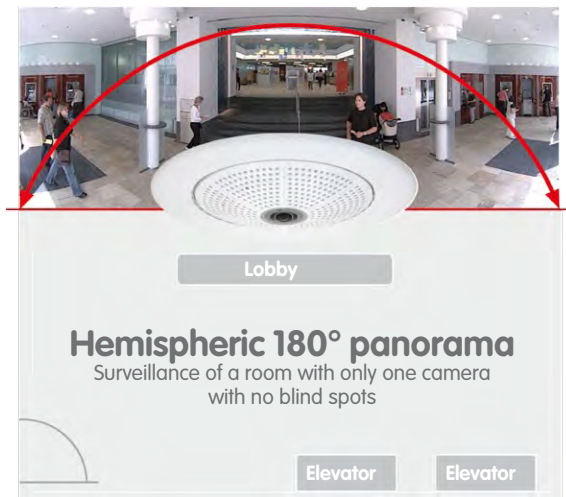
In-ceiling S14D sensor module

Discreet and Low Maintenance

Hemispheric cameras are extremely discreet because they manage their task with only **one lens**, which is generally focused on an entire room and not a specific object. Hemispheric cameras are without mechanical moving parts and require low maintenance. In addition, they are silent when panning and focusing on a specific image area.

Less Cameras Thanks To Panoramic Views

The perspective of the hemispheric image can also be transformed into an ultra-wide angle panoramic view spanning 180° if the camera is mounted on a wall, providing a wall-to-wall view of the room without any blind spots. It offers a substantially better view of the scene, compared to other cameras, and it also results in the need for fewer cameras overall. When ceiling mounted, one camera can also capture an entire room by two opposite panoramic views.



Original Q24M image:
wall-mounted at a
height of 2.3 m/7.5 ft



Hemispheric room coverage with wall mounting - one Q24M replaces four standard cameras

Keeping Objects In View At All Times

Using solutions featuring several individual cameras, moving objects will normally jump from one viewing area of a camera to another. This often produces a confusing situation for the viewer because objects may disappear from sight for a moment or even appear twice if the viewing areas overlap. This is not the case with hemispheric panoramic cameras. Objects remain in view at all times and the viewer can always keep good track of objects in the scene.



Everything Stored In The Recording

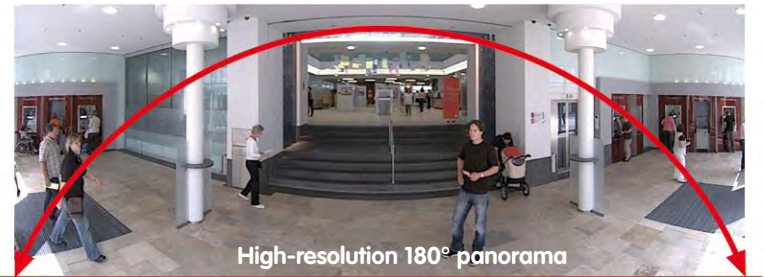
Traditional optical PTZ cameras can only record what is being viewed live. The virtual PTZ feature from MOBOTIX allows users to pan to other areas at a later stage in the recording because the **entire room** can be recorded as a hemispheric image.



Integrated
MicroSD card
(max. 64 GB)

High-Resolution 180° Panorama

The perspective of the hemispheric image can also be transformed into an ultra-wide angle panoramic view spanning 180° if the camera is mounted on a wall, providing a wall-to-wall view of the room without any blind spots. It offers a substantially better view of the scene, compared to other cameras, and it also results in the need for fewer cameras overall. When ceiling mounted, one camera can also capture an entire room by two opposite panoramic views.



Perfect Overview In Two Rooms At The Same Time

MOBOTIX hemispheric technology allows entire rooms to be captured by one camera lens. The S14D boasts double hemispheric features and can replace the time-consuming, expensive installation of several standard cameras while offering surveillance of two adjacent rooms at the same time. This camera, a world first, is evidence of MOBOTIX commitment to innovation as the global leader in megapixel video security systems.



Dual image up to
6 megapixels in size

Virtual PTZ (vPTZ) – Without Motor

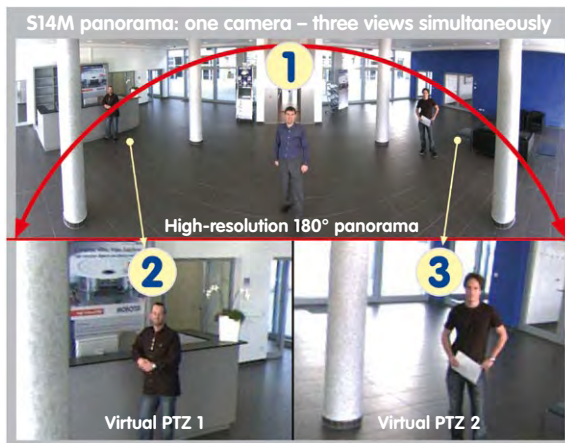
The S14 also zooms in on detail. The live image from the camera can be continuously enlarged, while allowing users to zoom in on any section of the image using a joystick, for example. Thus you have a PTZ camera without the disadvantages of maintenance or wear and tear. While zooming into a section in the live image, a full image can be stored in the recording for later analysis. No optical zoom PTZ camera in the world is capable of that!



vPTZ control, also
using a USB joystick

Select From Several Image Views

The surround function of a single S14 sensor module (ceiling-mounted) replaces four conventional cameras and shows four different directions simultaneously in quad view on a monitor. Virtual PTZ is available for each of the four views. Together with the 180° panorama, the S14 can deliver two more views simultaneously, making it possible to see the overview and to focus on two scenes at the same time ("Panorama Focus" display mode). With the S14D, it is also possible to record both sensor images simultaneously and display them on a monitor at a very highly detailed maximum resolution of 6 megapixels.



Panorama focus:
Original Q24M image

Highly User-Friendly

The full image from a hemispheric lens (Fisheye) is difficult to analyze. MOBOTIX solves this problem by perfectly straightening the uneven lines in the live image using the camera software. Since the image distortion correction of the hemispheric view and the generating of the panoramic view take place in the camera itself, no additional load is placed on the viewer PC, unlike a "standard" camera. Thus, displaying a large number of MOBOTIX cameras simultaneously on a single PC is possible.

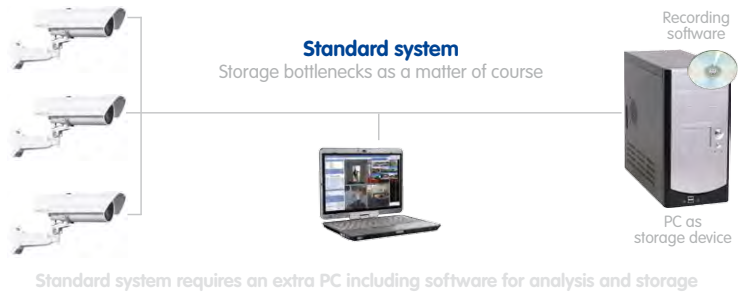
Highly Efficient Image Transfer

While other camera systems always transfer the full 3-megapixel images of a sensor module via the network for further analysis, a MOBOTIX camera sends only the relevant image sections. Therefore, a S14 panorama image needs only about 1/6 of the original data volume or bandwidth. This means that significantly more cameras can transfer images over the same network compared to "standard" cameras.

SUPERIOR STORAGE SOLUTION

MOBOTIX Storage Concept Without Bottlenecks

These days, video data is normally pre-processed and stored centrally on a PC or DVR using video management software. Video and audio streams from all installed cameras are directed to this central device. This can quickly cause data bottlenecks for high-resolution cameras, in particular. The storage system is also highly inefficient, because the high-resolution video must be transferred directly to the recording device without additional processing and with a high frame rate due to the lack of processing power of the PC.



With the MOBOTIX system, on the other hand, the necessary adjustments to the image format and frame rate for the application concerned (for example, two frames per second are sufficient for recordings in a gas station) are made inside the camera itself, reducing the load on both the network and the recording device (PC, server). MOBOTIX cameras can minimize the recording independent of the live video and the sound channel is also retained, even at two frames per second.

No Storage Limit

The decentralized MOBOTIX concept enables the user to save around ten times more cameras than usual on a single recording device because the camera manages the recording itself (on a PC, server, NAS), thus reducing the load on the device. For this reason, practically speaking, there is no memory limit for the entire system because theoretically, each camera is able to manage its own terabyte-sized recording device via the network. Another benefit of this concept is the use of affordable, reliable NAS drives that do not require any special software.

SD Card Memory Reduces Recording Costs

MOBOTIX cameras are also able to record up to 64 GB of video in their integrated memory. Thanks to this high storage capacity and the option of recording only the sequences in which an event occurs, external storage devices such as hard drives are rarely required. This saves on recording devices and network infrastructure and reduces the maintenance cost of mechanical components such as hard drives or fans. The internal SD cards (flash memory) are digital and since they do not have mechanical components, they are maintenance-free.

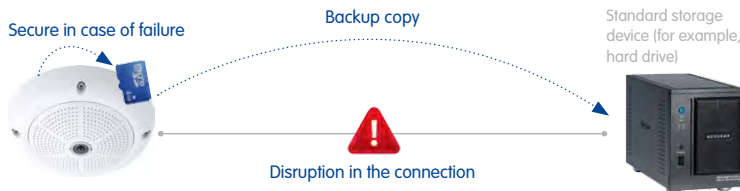


A single 64 GB SD card has space for:

- Two weeks of continuous recording of four gas station lanes
- Four days of video in TV quality
- 200,000 clips in high-resolution each lasting 10 s
- Two million images

Ideal for difficult network conditions or Wi-Fi

MOBOTIX cameras are ideal for difficult network conditions or wireless connections because the internal flash recording bridges network failures or bandwidth fluctuations and synchronizes data when a connection with the external recording device is restored.



MOBOTIX systems are decentralized and secure, even without a PC for storage

The option to back up the internal memory only at specified times (for example, only at night) also relieves the network and allows the existing network infrastructure to be used simultaneously in many cases.

Function available soon
via software update

ADDED SECURITY VALUE



Robust, Low-Maintenance Technology

The real added value of MOBOTIX products is reflected in characteristics such as enhanced functionality, **long life and robustness**. In general, MOBOTIX cameras have no moving parts. This makes the cameras very resistant to wear and tear, and reduces both maintenance costs and power consumption.

Alarm Management And Forwarding

Integrated sensors enable MOBOTIX cameras to recognize when an event has occurred. If necessary, the cameras will respond immediately with an alarm sound and will establish a direct video and sound connection to a control room.



Absolute Data Security

The security barriers that are built into the camera are extremely robust. The camera images are only accessible to authorized persons and are encrypted via SSL when they are transferred over the network.

Notification Of Failure

Your MOBOTIX video management system will automatically report any impairment or failure of individual network components (for example, cameras). This ensures maximum reliability and readiness for use.

Subsequent Searches

Unlike any other surveillance camera, MOBOTIX cameras are capable of recording the full image, even if the user is looking at enlarged detail in the live image. This full image recording can always be reviewed via digital pan/tilt/zoom whenever necessary at a later date. Users can search for events even in recorded video using post event video motion windows (in MxEasy or MxControlCenter). This is how, for example, a video motion window is placed above a door in the post image search dialog box. This will only filter sequences triggered when that door opens/closes.

Floor plan and camera view in MxControlCenter (free control center software from MOBOTIX)

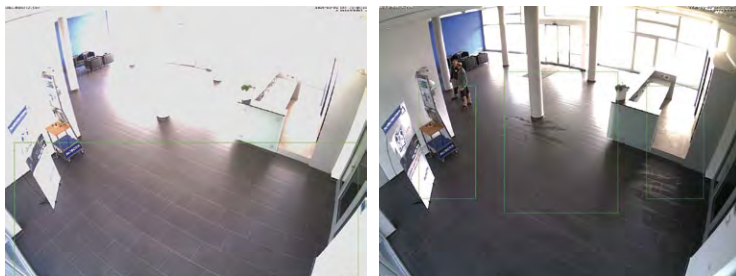


Sound Increases The Chance Of Detection

In the event of an alarm, MOBOTIX cameras can turn on their built-in microphones and record lip-synchronous audio. They are therefore an even greater help in analyzing a situation and easing clarification. In addition, the video system can be used for bidirectional communication via a loudspeaker/microphone.

No Problems With Backlight

MOBOTIX cameras are not adversely affected by the glare from direct sunlight. They deliver meaningful, detailed images all the time because the camera software supports easy programming of **independent exposure windows**, making them ideal for rooms with large glass fronts.



Placing the exposure window in the lower image area (left image) delivers less optimum results compared to moving three individual exposure windows up toward the windows (right image)

Vandalism Protection

The MOBOTIX S14 can also demonstrate its advantages even in critical environments. The inconspicuous appearance and low-visibility contact surfaces of the sensor modules, combined with the inaccessible camera housing including connectors, which can be mounted behind a wall or cover panel, make acts of vandalism significantly more difficult than with conventional cameras.

The S14 is also equipped with a shock detector as standard. If the camera housing is subjected to an impact, for example, it can simultaneously take video of the offender, trigger an alarm and notify the security company via telephone. Due to the build quality and absence of moving parts, MOBOTIX cameras are extremely tough. This typically allows them to stay fully operational, in particular, when they are subject to strong vibrations.

THE MOST IMPORTANT MOBOTIX COST BENEFITS

1

Increased Resolution Reduces Amount Of Cameras Needed

1536 lines, high-resolution sensors give a better overview and allow monitoring an entire room with just one camera.

2

Reduced Installation Costs At Any Distance

Standard Ethernet connection enables the use of common network components such as fiber, copper and wireless (WLAN).

3

Intelligent Cameras Reduce The Number Of Storage Devices

The decentralized MOBOTIX concept enables the user to save around 10 times the standard number of cameras using just one storage device.

4

Event-Controlled Image Format Minimizes Storage Costs

Automatic image adjustment (frame rate, size) in the case of movement, noises or sensor action reduces bandwidth and storage requirements.

5

Low Power Costs, No Extra Heating

Anti-fogging without heating allows the system to be powered throughout the year using network cable or two wires (PoE standard) and saves on the cost of power cabling.

6

Backup Power Supply Costs Reduced By 80%

Low power consumption, approx. 5 watts, enables year-round PoE (no heating required) with one centralized UPS from the installation room using network cable.

7

Robust And Practically Maintenance-Free

Fiberglass-reinforced composite housing with built-in cable protection and no mechanical moving parts (no auto iris) guarantees longevity.

8

Software For A Thousand Cameras & Storage Devices Included

The right premium operating software for every application: MxEasy for compact video solutions, MxControlCenter for the professional control center.

9

Unlimited Scalability And High Return On Investment

More cameras and storage can be added at any time – even while the system is in use; image format, frame rate and recording parameters can be camera-specific.

10

Additional Functions And Other Extras Included

Sound support, lens, wall mount and weatherproof housing (-30 to +60°C/-22 to +140°F) are included in the camera delivery; microphone and speakers available for most models.

THE MOST IMPORTANT MOBOTIX TECHNICAL ADVANTAGES

High-Resolution Digital Image Instead Of TV Quality

Megapixel sensor and image processing inside the camera generate sharp images with a higher resolution than HDTV, allowing them to be recognized as evidence in a court of law.

1

Hemispheric Technology For An Overview With No Blind Spots

360° allround view or 180° widescreen image, corrected for perspective; only one camera is needed to view the entire room or train platform without any blind spots.

2

Bridging Of Recording During Network Failures

In-camera data storage (up to 64 GB) can even bridge longer network failures or bandwidth fluctuations (for example with wireless networks).

3

Professional Software For Systems Of Any Size

This control center and recording software, which is free of charge and used in tens of thousands of systems around the world, sets no limits on the number of users, cameras or servers.

4

Very Low Network Load

Efficient video codecs, motion detection and data storage of up to 64 GB in the camera guarantee a very low network load.

5

No Storage Limit

There is no storage limit for the entire system because each camera is able to manage its own terabyte-sized storage device (NAS) via the network.

6

Sun And Backlight Compensation

CMOS-sensor without auto iris, digital contrast enhancement and configurable exposure measurement zones guarantee optimum exposure control.

7

Day & Night Maintenance-Free

MOBOTIX dual cameras with two sensors and digital switching between day and night modes operate reliably with no mechanical components in all lighting conditions.

8

Simultaneous Recording, Event Search And Live Viewing

Live video for multiple users, simultaneous recording and event search possible in seconds from anywhere in the world via a network connection.

9

Sound And SIP Telephony

Lip-synchronous sound (live & recording); every camera is also a video IP telephone compliant with the SIP standard, featuring camera control and automatic alarm calls.

10

1 AN OVERVIEW OF THE S14 FLEXMOUNT

1.1 Versions and Product Characteristics:



S14 FlexMount: Perfect For When Discretion Is Needed

Some application scenarios benefit from a surveillance camera that is present, but does not attract attention. With the S14 FlexMount, MOBOTIX is presenting an IP video system with an especially discreet appearance, enabling a flexible range of applications.



The inconspicuous look of this digital network camera is facilitated by extremely small sensor modules (with a diameter of just 50 mm/2 in), making it an ideal solution for where discreet design and appearance are paramount. Cameras without mechanical moving parts require low maintenance. In addition, they are silent when panning and focusing on a specific image area. Hotels and restaurants are typical locations for the S14 FlexMount, but installation in public buildings, waiting rooms, showrooms, parking garages, storage rooms and exhibition booths is also feasible.

S14M: Mono Camera System With Integrated Lens

MOBOTIX's first version of the camera is the S14M model (M = *Mono*). Here, a hemispheric lens is directly integrated into the camera housing. The camera features a high-resolution 3 megapixel color sensor or a 1 megapixel black-and-white sensor for locations with predominantly low lighting.

If needed, microphone and/or speaker units can be directly connected to the camera via suitable IO terminals.



S14D: Dual Camera System With Double Images Up To 6 Megapixels

The S14D (D = *Dual*), the second version, features one or two hemispheric sensor modules, each with an integrated microphone and two status LEDs, which can be connected to the base module via cables up to 2 m/6.6 ft long.



The sensor modules are supplied preassembled for ceiling or wall mounting. The visible external part of the sensor module is available in white and black, enabling it to blend into most installation environments.



Sensor modules (including status LEDs and microphone) in the available colors

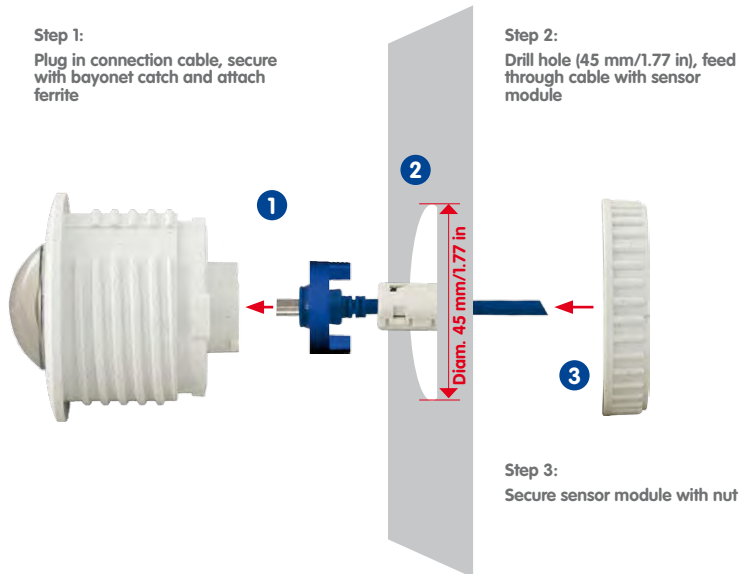
The S14D features up to two HiRes image sensors, which can be combined to output a color double image up to 6 megapixels in size. The system can be fitted with two day and two night sensor modules or with one day and one night sensor module. Depending on the resolution selected, the maximum frame rate is between 6 and 30 images per second (6 fps @ 6MEGA, 20 fps @ 3MEGA, 30 fps @ MEGA or lower).



Separate Housing And Lens Installation – Weatherproof According To IP65

The S14 FlexMount's flat housing, including long-term flash memory (MicroSD card up to 64 GB) and all internal and external connectors (Ethernet, MiniUSB, MxBus, microphone, speaker), can be installed discreetly and with optimal protection behind a wall or ceiling panel so that only the lens units in their protective housings are visible in the room.

Mounting the S14D's independent sensor modules is easier that ever. Plug the connection cable into the sensor module and secure it with the bayonet catch, attach the ferrite, drill a circular hole (diameter: 45 mm/1.77 in), feed through the cable and sensor module from the front, secure it with a nut, plug the connection cable into the base module and secure it. You're done!



Lens units can be replaced at any time



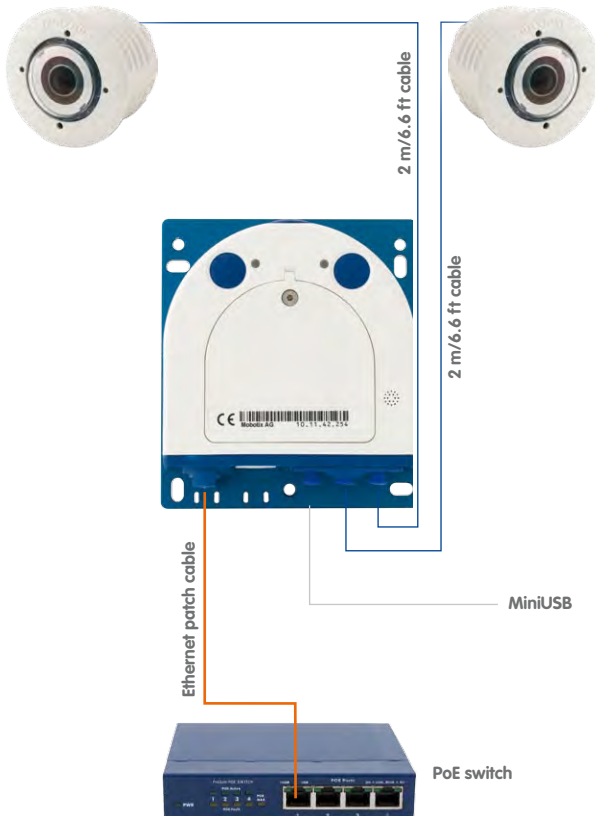
S14M: Hemispheric Camera For Concealed Installation

With the S14M, which features a permanently-attached lens, the camera housing can be concealed behind a cover or cladding (for example, stainless steel) up to 6.4 mm/0.25 in in thickness. Thicker surfaces may also be suitable for mounting the S14M if they can be hollowed out accordingly.

The entire camera plus cables and lens modules are weatherproof (IP65) and operate in a temperature range of -30°C to $+60^{\circ}\text{C}$ (-22°F to $+140^{\circ}\text{F}$). Because the S14 is designed to never fog up and does not require any heating, it can be operated all year round with power supplied via a standard PoE network cable. Power consumption is less than 5 watts.

Fast, Simple Cabling

The MOBOTIX S14 FlexMount (**S14D** and **S14M**) requires just one cable for data and power to be connected to a PoE switch and thereby to any expandable Ethernet network. There are two options for a weatherproof connection of the network cable to the S14 housing. A MOBOTIX patch cable up to 10 m/11 yd in length can be plugged externally into the housing from below and secured with a weatherproof bayonet catch, or the eight individual strands of the installation cable can be attached directly to the LSA cutting clamp inside the camera housing.



Sensor modules
including status LEDs
and microphone

A number of additional devices can be used together with the S14. They are connected via a network switch or directly to the camera housing via a MxBus or MiniUSB cable (for example, ExtIO, MOBOTIX function modules, audio devices, flash drives or UMTS/Wi-Fi USB modems). If the network switch also features an Internet connection, it can be used for encrypted access to the camera footage from anywhere in the world.

1.2 Hemispheric Image Views

1.2.1 Overview

Featuring hemispheric L11 lenses, the S14 FlexMount offers all the image views known from MOBOTIX's other hemispheric cameras, including *Panorama*, *Panorama Focus*, *Double Panorama*, *Full Image*, *Normal* and *Surround*. What's new on the S14D is that the selected view can be displayed as a dual image that combines both sensor modules. Independently of the currently-viewed image, the full dual image coming from both sensor modules can always be recorded in the background (full image recording).

World's First Double Hemispheric Camera

A world first, the S14D provides the option of using two hemispheric sensor modules within a single camera. This way, two entirely separate spaces – next to or on top of each other, indoors or outdoors – can be monitored simultaneously using just one camera.

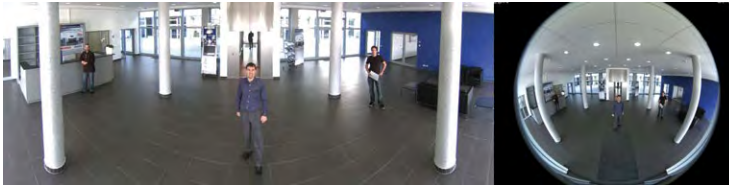


MOBOTIX's S14D is also the world's first hemispheric day-and-night camera. In this version, the black-and-white and color sensor modules are mounted directly next to each other so they cover the same area. The camera automatically chooses the best available mode depending on the lighting conditions: either the color sensor with daylight lens or the black-and-white image sensor with infrared lens. The dual sensor system provides excellent colors in daylight as well as superb light sensitivity in dark environments.



The difference between a MOBOTIX day-and-night camera and the standard versions is primarily that it continuously uses two adjacent sensor modules rather than relying on a mechanical filter switch, which can be costly to maintain. The other advantage is much better image quality in poor lighting conditions, as the camera uses a real infrared-sensitive, black-and-white image sensor instead of the usual color sensor with electronic color fade-out, whereby the infrared sensitivity is reduced through integrated color filters.

180° Panorama – Full Image (Wall-Mounted)

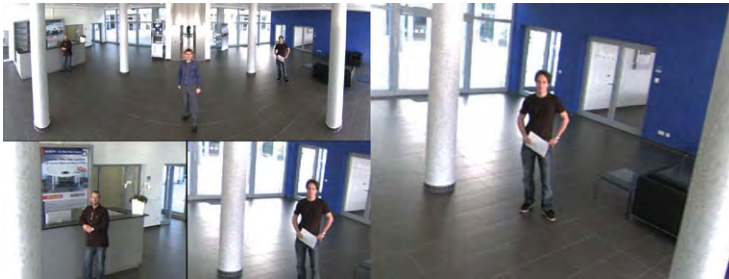


S14D: Different image views can be selected (figures show examples only) for two sensor modules

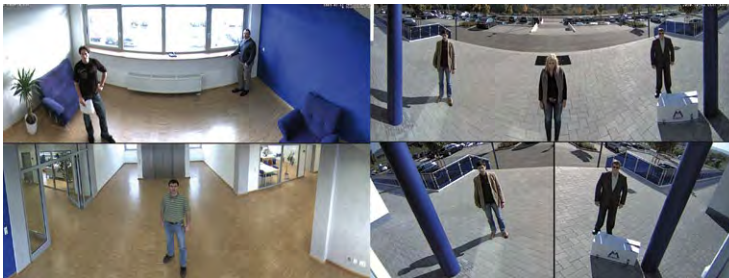
180° Panorama – Panorama Focus (Wall-Mounted)



Panorama Focus – Normal View “Zoom” (Wall-Mounted)



Double Panorama (Ceiling-Mounted) – Panorama Focus (Wall-Mounted)



1.2.2 Details (Sample Views For One Sensor)

High-Resolution 180° Panorama (Wall-Mounted)

The hemispheric image (original full image) can also be transformed into an ultra-wide angle panoramic view spanning 180° if the camera is mounted on a wall, providing a wall-to-wall view of the room with no blind spots.

It offers a substantially better view of the scene, compared to other cameras, and it also results in the need for fewer cameras overall.



Original full image

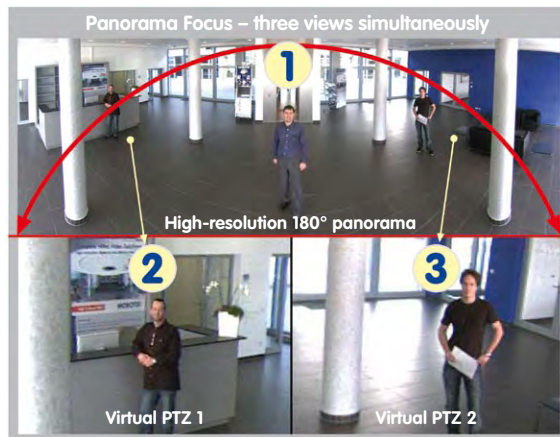


Panorama Focus – One Camera, Three Views (Wall-Mounted)

Maximum room overview while simultaneously viewing detail in a single image. A hemispheric sensor module can also provide two additional views so that you can focus on two detail scenes simultaneously in addition to the 180° panorama view.



Original full image



Double Panorama For A Simultaneous View In Two Directions (Ceiling-Mounted)

When the camera is mounted in the center of the ceiling in a room, the "Double Panorama" display mode provides a corrected panorama image of both halves of the room. It corresponds roughly to the situation of personally standing in the middle of the room and being able to look both forwards and backwards at the same time. This is a superb overview for the user – provided by a single sensor module.



Original full image



Full Image And Normal View

The full image view displays the circular, non-software-corrected original fisheye view of the entire image sensor, just as it is stored in full image recording. The "Normal" view displays a corrected image section that is easier to pan, tilt or zoom.



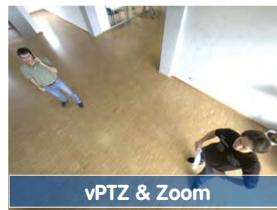
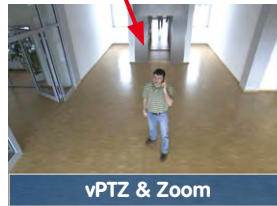
Surround View (Quad View), Based On The Corrected Full Image

The “Surround” display mode (ceiling-mounted) replaces four conventional cameras for each sensor module and shows four different directions simultaneously in quad view on the monitor. The preset North position can be moved to any direction in the image. The camera generates the other three directions (**East, South, West**) automatically and stores them as separate views.



Each of the four views features a software-controlled pan/tilt/zoom function (virtual PTZ), allowing it to be customized as necessary.

In order to simplify usage, the camera can store numerous user-defined camera views, which can easily be brought up using joystick keys or softbuttons, using the vPTZ function. Besides being able to manually bring up specific camera views, the camera can also show them automatically by moving through the **North, East, South** and **West** views, or by showing the first 16 saved camera views (one after the other like in a slide show).



Surround view: Each of the four views can be individually modified



Original full image

1.3 Main Advantages Of The S14 FlexMount

The high-resolution S14 FlexMount is not just a universally deployable, highly innovative and easily concealable camera system. Featuring a faster microprocessor and updated system platform, it also replaces the existing M12 DevKit including MxLink. This results in twice as much computing power, with smooth video frame rates even when there are two sensor images being transmitted simultaneously (S14D only).

Double Hemispheric Camera S14D

When a S14D with two sensor modules is deployed, they can be installed in different mounting positions (ceiling, wall, floor), even in different rooms, if needed. Each sensor module offers the full range of functions provided by a hemispheric camera. The day/night versions of the sensor modules can be freely combined in installation (including automatic day/night switching for the same view angle).

Double The Frame Rates Of The M12 DevKit

The modified hardware of the S14 not only provides significantly increased performance thanks to the use of the PXA320 XScale processor, it also includes FPGA hardware that noticeably frees up the CPU.

Enables Long Distances Between Sensor Modules (Integrated MxLink)

The cables to the sensor modules can each be up to 2 m/6.6 ft long, thanks to FPGA technology. This way, a single camera can be used to monitor applications such as two adjacent rooms.

Weatherproof Connections On Camera And Sensor Modules

Thanks to the IP65-weatherproof Ethernet, MxBus and MiniUSB ports on the camera housing, the network cable (patch or installation cable), MOBOTIX function modules and other devices can all be connected directly to the S14D or S14M.

Like the camera itself, the S14D's sensor modules are weatherproofed according to IP65 and can handle temperatures ranging from -30°C to +60°C (-22°F to +140°F). The integrated microphone enables recording of audio data and the two LEDs signal a range of operating and alarm states.

Up To 64 GB Of Internal Memory

The MicroSD card installed in the S14's camera housing has a capacity of 4 GB (max. 64 GB) and allows for decentralized storage and additional reliability.

Adjustable PoE Class

Adjusting the PoE class via the camera software also enables the use of PoE switches that cannot be operated on all Class 3 ports (up to max. 12.95 W).

Flexible And Futureproof

The system can easily be matched to suit the location's requirements, thanks to a range of available sensor modules (S14D only). Replacing the sensor modules at a later stage to change the focal lengths (coming soon), or upgrading from one to two sensor modules, is quick and easy.

1.3.1 New Features Compared To M12-DevKit

New	Comment
Sensor modules including lens and image sensor	Up to two can be connected, simultaneous display and recording, not compatible with M12-DevKit
Audio	S14D sensor modules provide an integrated microphone. Additional connections for microphone and speaker are provided on the S14 housing
MicroSD card	Replaces SD card and R models of the M12-DevKit
MiniUSB	Adapter cable available from MOBOTIX
MxBus	Enables connection of numerous extensions (MX-GPS-Box, ExtIO, CamIO, etc.)
Power supply	Via a blue NPA-PoE-Set, MX-NPA-Box or standard PoE switch
Ethernet connection	Directly to S14 via MOBOTIX patch cable or installation cable to the integrated LSA terminal connector
Sub-D HD-15	Port can be used via MX-232-IO Box (MOBOTIX accessories)
Shock detector	Reports acts of vandalism, etc. to the S14 camera housing



1.4 General MOBOTIX Camera Functions

Like all MOBOTIX cameras, the S14 line has a variety of software functions: from motion detection and long-term storage right through to alarm notification via video IP telephony. Unlike camera systems from other manufacturers, buying and installing additional software on the computer is thus unnecessary. It is possible to use a web browser. However, you can also download the free MxControlCenter or MxEasy from the MOBOTIX website, which enables you to quickly display multiple cameras on one monitor, switch alarms with sound or conveniently search for an event.

vPTZ: Virtual Pan/Tilt/Zoom Features

While MxControlCenter has been providing virtual PTZ features for quite a while, these features are now available directly in the MOBOTIX camera. This means that you can continuously zoom into or out of the live image using either the mouse wheel or a joystick. When storing images or video sequences, you can choose to store either the visible image area of the live image or the full sensor image (full image recording). This also allows you to examine parts of an image or video that had not been visible in the live image section on display at the time of the recording.

Automatic Image Correction (With L22 Lenses Only)

A problem familiar from the field of photography is the distortions that result from using wide-angle lenses. Straight lines near the image borders are curved. The integrated distortion correction features of the MOBOTIX camera (and of MxControlCenter) allow the curve of various lenses to be corrected using software functions.

Live Video With Up To 30 Frames Per Second, Including Sound

MOBOTIX cameras deliver smooth live video with lip-synchronous audio, yet they keep network load to a minimum. Some analog systems may also be able to deliver this, but the recording quality is so much higher with MOBOTIX since the cameras efficiently store the high, live image resolution and frame rate without compromising image quality. MOBOTIX technology thus provides for continuous recording of simultaneous video from 30 cameras at 30 frames per second each, including sound, all on one standard PC.

Very Low Network Load

MOBOTIX's patent-pending **streaming format MxPEG** enables fast live video with sound at extremely low network load (1 to 2 Mbps). Since the MOBOTIX camera itself (and not the computer) detects movements in the image, video sequences are only transmitted when they are being stored externally.

Camera vPTZ functions can be controlled with a mouse or joystick

Using a joystick: Internet Explorer with activated MxPEG ActiveX plug-in, MxControlCenter or MxEasy required

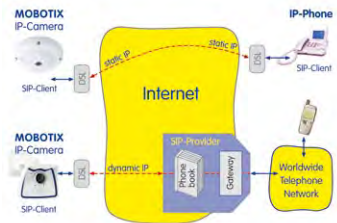
MxControlCenter and MxEasy can be downloaded free-of-charge at www.mobotix.com

Voice Over IP

Moreover, MxPEG provides for lip-synchronous audio and two-way communication between the camera and a computer. Room surveillance is possible using a browser (Internet Explorer), MxControlCenter or MxEasy. Customized alarm notification on your mobile phone or via Internet telephony is just as easy as event-controlled voice messages directly from the camera.

Internet Telephony (SIP) And Video SIP

Video SIP allows audio/video connections to be established to the camera using Windows Messenger or similar applications (for example, CounterPath X-Lite/Eyebeam). This feature also allows the camera to be controlled remotely using the phone keys and the camera itself can place phone calls in case of alarms.



Long-Term Storage On File Servers Included

MOBOTIX cameras have an integrated long-term storage system for Linux, Windows and Mac OS X computers. Every camera manages its own storage space as a ring buffer on the shared folder. Thanks to this decentralized approach, 30 live cameras can store images of up to 30 frames per second each, including sound, on a single computer.

Internal DVR: Storage On MicroSD Cards

MOBOTIX cameras support the direct storage on an internal MicroSD/SD card. By using the integrated DVR, the camera is able to offer the following additional applications:

- Standalone operation of the camera without a file server by recording to the MicroSD card
- High-security application with recording on a file server or NAS/SAN in which the SD card serves as storage buffer. It can thus bridge longer network or file server failures without losing any video sequences (supported in a future software version).
- Event downloads from the MicroSD card for evaluation of the recorded sequences on a computer

	Internal DVR	External USB storage	Comments on USB storage
M12	Optional	Optional	Adapter cable required
D14	Integrated (as standard)	Optional	Device can be connected directly
V12	Optional	-	-
M24	Integrated (as standard)	Optional	Device can be connected directly
D24	Integrated (as standard)	Optional	Device can be connected directly
Q24	Integrated (as standard)	Optional	Device can be connected directly
S14	Integrated (as standard)	Optional	Device can be connected directly

External USB storage:
Lower maximum data rate
compared to internal DVR

Event And Time Controlled Recording

Just like triggering event-controlled recording upon detecting movements in the image, the camera can also record when the volume detected by the microphone exceeds a certain trigger value. Using scheduled daily recording, time tasks can start or stop video recording, upload images to a website, or send e-mails with video/audio clips. Vacation times and holidays can be programmed.

Remote Alerting

In case of an alarm, MOBOTIX cameras can automatically pop up windows or activate other functions at a remote security control center. The cameras can use network/Wi-Fi, GSM/GPRS/UMTS (3G), or Internet connections for this purpose.

Integrated Power-Over-Ethernet

Power is supplied as Power-over-Ethernet via the network cable using the MOBOTIX-NPA-PoE-Set, MX-NPA-Box or a PoE compatible switch (according to the IEEE 802.3af or 802.3at (PoE+) standard).

No heating required -
PoE is no problem,
even in winter

Caution

Previous MOBOTIX network power accessories such as the NPA-Set, Power-Box and Power-Rack (MX-NPA-Set, MX-NPR-4 and MX-NPR8/20) are not suitable for use with the S14.

No heating is necessary thanks to the well-insulated plastic housing and anti-fogging properties. Due to their low power consumption (approximately 5 watts), MOBOTIX cameras may be operated both indoors and outdoors using a PoE power supply, unlike those of other manufacturers.

Logos, Animated Or Freestyle

The logo generator of MOBOTIX cameras allows you to integrate banners and graphics (including files loaded from any URL) into the current camera images – with optional scheduler control. MOBOTIX cameras are the only network IP cameras supporting animated and transparent graphics.

Logo generator for
displaying graphics
already integrated
in the live image



MxControlCenter – Professional Video Management, Free Of Charge

Instead of using a web browser, you can download and install the free-of-charge MxControlCenter from the MOBOTIX website. This program allows live images from high-resolution MOBOTIX cameras to be displayed on one monitor with sound. In addition, MxControlCenter can activate alarms with lip-synchronous audio and also enables convenient event search. The integrated Layout Editor of MxControlCenter allows you to quickly create floor plans by simply dragging/dropping the cameras onto a background image. Load a floor plan as a background image, drag and drop the cameras and you're done.



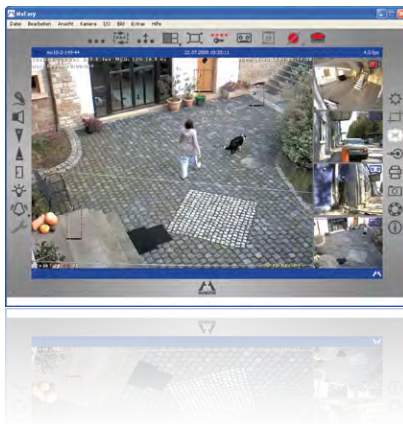
Up to **several hundred cameras** can be managed on a standard PC (Windows-based)

Free download at www.mobotix.com

No license fees
Free updates

MxEasy – Intuitive Application For Windows, Apple And Linux

MxEasy aims at easy operation of the most important camera functions through its intuitive user interface, thus creating a new user experience when viewing and controlling MOBOTIX cameras. The clear design allows up to 16 cameras to be managed, and the application can show up to four cameras at the same time.



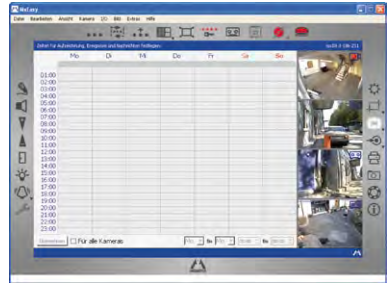
Suitable for up to 16 MOBOTIX cameras

Free download at www.mobotix.com

No license fees
Free updates

All settings selected in MxEasy (for example, virtual camera position, zoom, brightness, volume, microphone sensitivity, image storage, signal outputs) are usable immediately and are stored instantly in the configuration of the corresponding camera. The calendar function integrated in the **Alarm Planner** provides access to innovative features for scheduled settings of one or more cameras.

This tool not only controls video and sound recording based on certain time and date information, but also allows features like motion detection, image brightness and the microphone to be activated/deactivated based on a date and time schedule.



MxEasy is available as a free-of-charge download for Windows and Mac OS X from www.mobotix.com.

Diverse Installation Options

Not only can MOBOTIX cameras be used under almost all weather and temperature conditions, they also offer suitable installation materials from a wide range of accessories for any conceivable application scenario.

Additional Camera Functions (Software)

- **True software scaling** generates smaller image formats easily for PDAs (such as 320 × 240, 160 × 120, etc.)
- **Audio/video recording** has three different recording modes: event recording with sound, continuous recording with variable frame rate and sound, and event-controlled snapshot recording of JPEG images
- **Storage failure detection** can monitor a file server (or a flash storage device) and can use one or more of the defined messaging options for error notification
- **Player of recorded images/video sequences includes sound** in the integrated video management system
- **Multiwatcher screen can display and monitor several cameras** over the Internet with only one camera requiring access from the outside. This "proxy" camera uses very little bandwidth, making it an ideal solution for low-bandwidth connections
- **MultiView screen for displaying multiple cameras** or events appears in one browser window
- **Event notification** via e-mail, voice notification (phone call), sounds and by visual means (for example, red frame in live image)
- **Video motion analysis** for counting objects and analyzing motion directions/motion frequency patterns of captured moving objects

- **Time Tables** that handle customized holidays and vacations are used to control the camera's arming, image recording, actions, messaging, logos, the obscure image function as well as other features
- **Remote signaling for master/slave cameras**, where the master camera controls the arming status of the slave cameras allows all slave cameras to be armed using a key switch connected to the master camera, for example.
- **Transfer profiles** allow easy control of transmissions via FTP, e-mail, phone calls and network messages.
- **Speakerphone*** with speak, listen and intercom modes is enabled using the camera's microphone and speaker
- **Phone Call-In*** remotely controls the camera using a touchtone telephone (retrieve camera information, establish an Internet connection, announce the retrieved IP address, two-way communication, etc.).
- **MxPEG video compression and display** uses MxControlCenter or MxEasy. The ActiveX plug-in for Internet Explorer users brings all advantages of MxPEG to the browser-based user interface, including the audio stream to and from the camera.
- **Routing** allows use of other network connections besides the standard LAN.
- **DynDNS client** for accessing the camera via the Internet using a symbolic name (for example, mymobotixcam.dyndns.org) if the provider assigns a new dynamic IP address every time the camera connects to the Internet.
- **Non-voidable backup system** starts the cameras in the original operating state if a software update fails, allowing the user to easily restart the update process.
- **Enhanced startup options** for the camera (obtain IP address via DHCP, announcement of IP address and other network data, reset to factory default settings)
- **Notifications upon errors or when rebooting** provide a method for executing one or more notifications like blinking of the camera LEDs, audio messages, FTP, e-mails, phone calls or network messages.
- **Extended security features** protect the pages and features of the camera and prohibit unauthorized access (IP-level access control, intrusion detection). They also provide SSL-protected transmission of the video sequences and the data (using SSL encryption and X.509 certificates).

* Telephony features using VoIP connections (Internet telephony)

Free Software Updates (www.mobotix.com)

MOBOTIX provides **software updates free-of-charge** at regular intervals that improve and expand the camera's functionalities. Chapter 6, «*Software Update*», in the *Software Manual* provides more information on the process.

Free-of-charge software updates from www.mobotix.com

1.5 Lens Options

MOBOTIX S14 models ship with standard **L11 fisheye lens units with a 180° horizontal image angle**. The integrated virtual PTZ features of the camera software or MxControlCenter/ MxEasy properly correct the lens distortion that is specific to each of the lenses. These lenses deliver good image quality even when using maximum digital zoom. Since MOBOTIX cameras are backlight-proof, they do not require a mechanical auto iris, making them extremely robust and maintenance free.



Lenses	L11	L22*	L32*	L43*	L65*	L135*
Original image						
35 mm equivalent	11 mm	22 mm	32 mm	43 mm	65 mm	135 mm
Nominal focal length	1.8 mm	4 mm	6 mm	8 mm	12 mm	25 mm
Aperture	2.0	2.0	2.0	2.0	2.0	2.5
Horizontal image angle	180°	90°	60°	45°	31°	15°
Vertical image angle	160°	67°	45°	34°	23°	11°
Dist. 1 m	m	m	m	m	m	m
Image width	infinite	2.0	1.1	0.8	0.5	0.3
Image height	11	1.3	0.8	0.6	0.4	0.2
Dist. 5 m	m	m	m	m	m	m
Image width	infinite	10.0	5.7	4.1	2.7	1.3
Image height	55	6.6	4.1	3.0	2.0	1.0
Dist. 10 m	m	m	m	m	m	m
Image width	infinite	20.0	11.5	8.2	5.5	2.6
Image height	110	13.3	8.2	6.1	4.0	1.9
Dist. 20 m	m	m	m	m	m	m
Image width	infinite	40.0	23.0	16.4	11.0	5.2
Image height	220	26.6	16.4	12.2	8.0	3.8
Dist. 50 m	m	m	m	m	m	m
Image width	not specified	100.0	57.5	41.0	27.5	13.0
Image height	not specified	66.0	41.0	30.5	20.0	9.5

Notes

The specified focal lengths of MOBOTIX lenses do not reflect the actual focal length of the lenses, but the focal length (Lxx mm) converted to 35 mm camera format. For example, the MOBOTIX L11 hemispheric lens has an actual focal length of 1.8 mm. This would be the equivalent of 11 mm on a 35 mm camera. This lens is thus called **L11**. Since the image sensors in digital cameras have different sizes, converting the focal lengths to 35 mm camera as a known format allows the image formats and the fields of vision of the different lenses to be calculated and compared more easily. Another benefit is that you can easily set a 35 mm camera (analog or digital) to the same focal length as the MOBOTIX lens (Lxx) to obtain the same field of vision. This approach greatly facilitates lens selection.

*L22 Lenses... L135 available for S14D soon

S14M only available with L11 lens

S14D sensor modules can be freely replaced

Sensor modules L22 through L135 provide a non-reflective protection layer made of tempered glass

1.6 S14 FlexMount Hardware Features

 S14M  S14D	 MX-S14M-SEC-D11	 MX-S14M-SEC-NIGHT-N11	 MX-S14D-SEC
Hardware Features S14 FlexMount			
Outdoor weatherproof	IP65	IP65	IP65
Ethernet/MiniUSB/MxBus/MicroSD	X	X	X
MicroSD slot (internal DVR, max. 64 GB)	X	X	X
Image sensors	Color	BW	2x color/ 2x BW
Lenses	L11	L11	L11
Resolution (per sensor)	3MEGA ¹	1MEGA ¹	3/1MEGA ¹
Resolution horizontal x vertical (per sensor)	2048 × 1536	1280 × 960	2048 × 1536, 1280 × 960
Max. frame rate (fps) CIF/VGA/MEGA/3MEGA	30/30/30/20	30/30/30/20	30/30/30/20
Sensitivity of color sensor at 1/60 second (lux)	1	–	1
Sensitivity of BW sensor at 1/60 second (lux)	0.1	0.1	0.1
Sensitivity of color sensor at 1 second (lux)	0.05	–	0.05
Sensitivity of BW sensor at 1 second (lux)	0.005	0.005	0.005
Automatic night mode switch for color/BW	–	–	X
RAM storage (MB)	128	128	128
Temp. video storage (MB), ring buffer	64	64	64
Internal DVR (MicroSD), ring buffer	up to 64 GB ²	up to 64 GB ²	up to 64 GB ²
• CIF images (64 GB int. DVR), approx.	4 million ³	4 million ³	4 million ³
• VGA images (64 GB int. DVR), approx.	2 million ³	2 million ³	2 million ³
• MEGA images (64 GB int. DVR), approx.	700,000 ⁴	700,000 ⁴	700,000 ⁴
• 3MEGA images (64 GB int. DVR), approx.	320,000 ⁴	320,000 ⁴	320,000 ⁴
Microphone and speaker (external connection)	X	X	X
Microphone integrated into sensor modules	–	X	X
Shock detector	X	X	X
Warranty (months)	24	24	24
Concealed installation	X	X	X
Special Software Features S14			
Dual image display	–	–	X
Dual image storage	–	–	X

¹ Color sensor: 3MEGA resolution with 2048 × 1536 pixels; BW sensor: 1MEGA resolution with 1280 × 960 pixels

² 4-GB MicroSD card pre-installed

³ Estimated number of images in snapshot mode; in the case of dual images (right and left lens), the number of images is halved accordingly

1.7 Software Features For All Camera Modules

 M12	 S14M	 D14	Basic Model	Web Model	IT Model	Secure Model
 M24M	 D24M	 Q24M				
Software Features For All Camera Modules						
Digital zoom (continuous) with panning:			only Q24	X	X	X
Motion JPEG/MxPEG video streaming			X/X	X/X	X/X	X/X
Custom exposure windows			X	X	X	X
Video motion detection			X	X	X	X
Time and event control (FTP, e-mail, logos)			X	X	X	X
Weekly schedules/holidays			–	X	X	X
Web functionality (FTP, e-mail)			X	X	X	X
Quad/MultiView in browser			X	X	X	X
Recording/Playback in browser			X	X	X	X
Logo generator, animated			–	X	X	X
Snapshot recording (pre- and post-alarm images)			3	3	10	50
Terabyte ring buffer (Win/Lin/Mac) via network			–	–	X	X
Continuous video/sound recording, 0.2 to 30 fps			–	–	X	X
Video/audio recording (event-controlled)			–	–	X	X
Event-controlled frame rate with continuous audio			–	–	X	X
Flexible event logic			–	–	–	X
Master/slave arming by one camera			–	–	–	X
Time-scheduled privacy zones, several areas			–	–	–	X
Bidirectional sound (IP) from/to browser			–	–	X ⁵	X ⁵
Customized voice messages			–	–	X	X
VoIP telephony (audio/video, SIP)			–	–	X ⁵	X ⁵
Alarm calls to softphones (SIP), for example, X-Lite			–	–	X	X
Remote alarm notification (alarm via network message)			–	–	X	X
RS232 Data Logger/Terminal ⁶			–	–	X	X
Programming interface/HTTP API			–	–	X	X
Security features (HTTPS/SSL, IP-level access control, network authentication IEEE 802.1X)			X	X	X	X
MxAnalytics (image analysis functions)			–	–	–	X*
Model Feature List						
Image size			VGA	3MEGA	VGA	3MEGA
Image sensor			Color	Color	Color & B/W	Color & B/W
Audio support (microphone/loudspeaker)			–/L ⁵	–/L ⁵	M/L ⁵	M/L ⁵

New in S14:
Echo elimination, any number of action profiles can be executed simultaneously per event, full image storage

⁵ An external speaker and microphone can be connected directly on the S14

⁶ S14 if using MX-232-IO-Box

*Currently available for Q24M-SEC only

1.8 Technical Data

Technical Data S14 FlexMount	
Model versions	MX-S14M-SEC (day), MX-S14M-SEC-NIGHT (night), MX-S14D-SEC (all combinations of day/night sensor modules)
Lens options	11 mm (on 35 mm equiv.), horizontal image angle: 180°
Sensitivity	Color sensor: 1 lux (t = 1/60 s), 0.05 lux (t = 1/1 s) Black-and-white sensor: 0.1 lux (t = 1/60 s), 0.005 lux (t = 1/1 s)
Image sensor S14M/S14D (in sensor module)	1/2" CMOS, progressive scan
Max. image resolution (dual image)	Color, Color: 4096 × 1536 (6.2MEGA) Color, Black-and-white: 2048 × 1536, 1280 × 960 (4.3MEGA) Black-and-white, Black-and-white: 2560 × 960 (2.5MEGA)
Image format (per sensor)	User choice of image format, for example, 2048 × 1536 (3MEGA), 1280 × 960 (MEGA), 1024 × 768, 800 × 600, 768 × 576 (D1-PAL), 704 × 576 (TV-PAL), 640 × 480, 384 × 288, 320 × 240, 160 × 120
Max. frame rate M-JPEG (live/recording)	VGA: 30 fps, MEGA: 10 fps, 3MEGA: 4 fps, 6MEGA: 2 fps
Max. video rate MxPEG(live/recording/audio)	VGA: 30 fps, MEGA: 30 fps, 3MEGA: 20 fps, 6MEGA: 8 fps
Image compression	MxPEG, M-JPEG, JPEG, H.264 (for SIP video only)
Internal DVR	MicroSD slot including 4 GB, max. 64 GB
External video ring buffer	Directly on NAS and PC/server without additional recording software
Software (included)	MxEasy video management software, MxControlCenter control room software
Image processing	Backlight compensation, automatic white balance, image distortion correction, video sensor (motion detection)
Virtual PTZ	Digital pan/tilt/zoom, continuous 8× zoom
Alarm/events	Triggered by motion detection, external signals, temperature sensor, microphone, shock detector, notification via e-mail, FTP, IP telephony (VoIP, SIP), visual/acoustic alarms, pre- and post-alarm images
Audio	Microphone in sensor module (S14D only, S14M via ext. microphone), lip-synchronous audio, two-way communication, audio recording, ext. speaker can be connected directly
Interfaces	10/100 Ethernet, MiniUSB, MxBus; signal inputs/outputs and RS232 via accessories
Video telephony	VoIP/SIP, two-way communication (with ext. microphone/speaker, not included), remote control via key code, event notification
Security	User/group management, HTTPS/SSL, IP address filter, IEEE 802.1x, intrusion detection, digital image signature

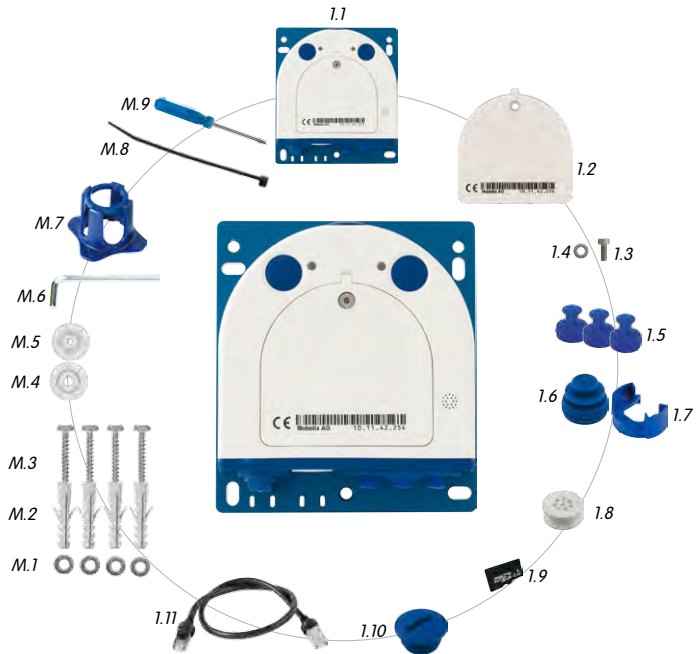
Technical Data S14 FlexMount	
Certification	EMV (EN 55022, CISPR 22, EN 55024, EN 61000-6-1+2, FCC Part 15B, AS/NZS3548), EN 50121-4, EN 50155
Power supply	Year-round Power-over-Ethernet (IEEE 802.3af/t); PoE class variable (class 2 set by default), approx. 4.5 W
Operating conditions	IP65, -30°C to +60°C (-22°F to 140°F)
Dimensions/weight S14M	W x H x D: 115 x 130 x 39.4 mm (installation dimensions); weight: approx. 457 g (including lens)
Dimensions/weight S14D	W x H x D: 115 x 130 x 33 mm; weight: approx. 444 g (without sensor modules, see below)
Dimensions/weight Sensor module L11	Diam. x H: 50 x 33.4 mm (installation dimensions; weight approx. 91 g (including lens); available colors: white and black
Weight of 2 m/6.6 ft connection cable	Approx. 68 g
Standard delivery	Housing (high-resistance composite, PBT), white, shock-resistant dome (transparent), mounting parts, Allen wrench, 50 cm/20 in patch cable, manual, software, 4 GB MicroSD card (built-in)



www.mobotix.com, go to **Products > S14 FlexMount** and open the basket, that contains the **Product Configurator**. Use this to order the required parts in any of the available colors

1.9 S14 FlexMount – Scope Of Delivery

1.9.1 S14D FlexMount – Scope Of Delivery



Item	Number	Part Name
1.1	1	Base module (camera housing with base plate)
1.2	1	Housing cover for S14D (installed)
1.3	1	Stainless steel flat-head Allen screw M4x8 (installed)
1.4	1	Washer
1.5	3	Sealing plug, blue, small (sensor modules, USB, inserted)
1.6	1	Sealing plug, blue, large (Ethernet patch cable, installed)
1.7	1	Cable retainer with bayonet catch (Ethernet patch cable, installed)
1.8	1	Single wire plug, white (Ethernet installation cable, microphone, speaker, MxBus)
1.9	1	MicroSD card, 4 GB (installed)
1.10	1	Rotary plug, SD card, blue (installed)
1.11	1	Ethernet patch cable, 50 cm/20 in, with seal

Installation Accessories

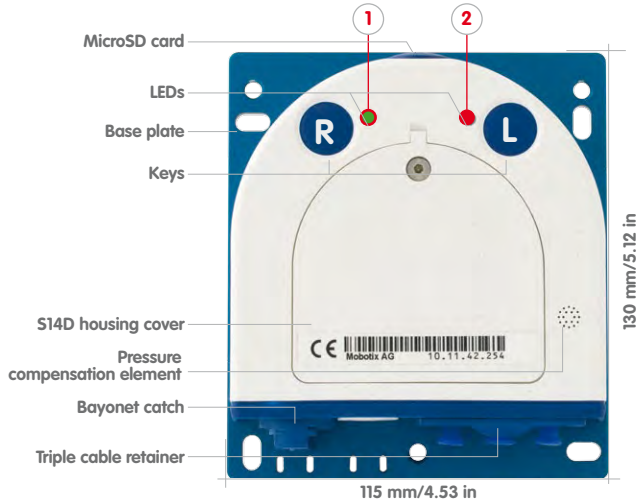
Item	Number	Part Name
M.1	4	Stainless steel washers, diam. 4.3 mm
M.2	4	Dowels 6 mm
M.3	4	Stainless steel wood screws 4x40 mm with PZ 2 driver bit
M.4	2	Cable plug, 5–7 mm, white (Ethernet installation cable)
M.5	1	Cable plug, 3–5 mm, white (Ethernet installation cable)
M.6	1	Allen wrench 2.5 mm
M.7	1	Multifunctional tool (lens, dome, filter inserts)
M.8	1	Cable tie (Ethernet installation cable, microphone, speaker, MxBus)
M.9	1	Screwdriver (screw clamps)

Base Module S14D

The MOBOTIX S14D consists of a housing, a housing cover and a base plate for attaching the camera.

LED defaults:

- 1 Power (on), Error (flashes)
- 2 Recording (flashes)



Externally-Accessible Connections On The S14D

The MOBOTIX S14D provides the following external connections that can be accessed once the cover plugs are removed:



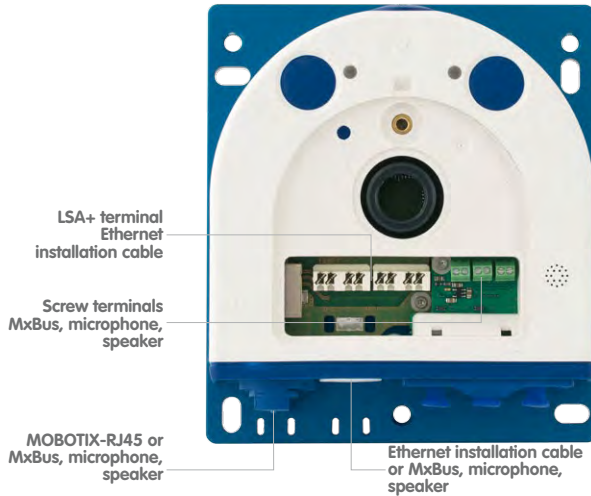
Special USB cable for external devices (USB stick, USB hard drive) available as an accessory

The external connections may only be used with the designated sealed MOBOTIX cables:

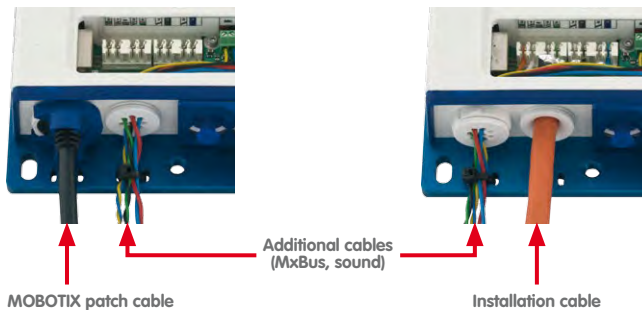
- Ethernet patch cable: **MX-OPT-CBL-LAN-1/2/5/10**
- MiniUSB (straight/straight): **MX-CBL-MU-STR-05/2/5**
- MiniUSB (straight/angled): **MX-CBL-MU-EN-STR-05/2/5**
- MiniUSB to USB A (straight to USB socket): **MX-CBL-MU-STR-AB-05/2/5**
- Sensor module: **MX-S14-OPT-CBL-05/1/2**

Internally-Accessible Connections On The S14D

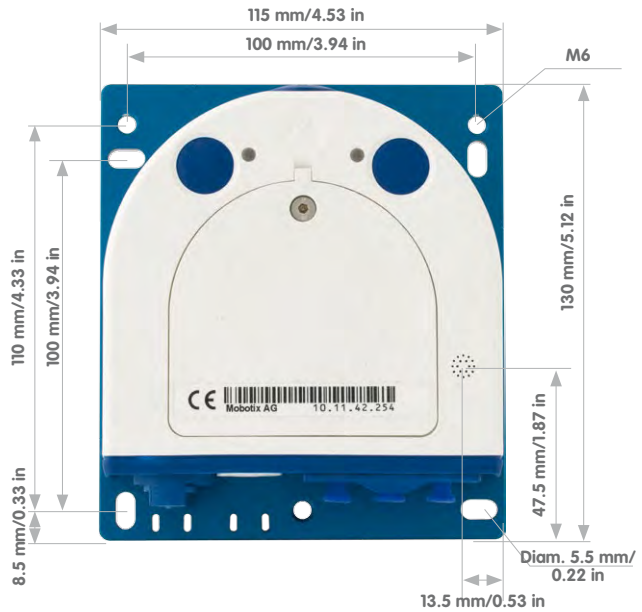
The MOBOTIX S14D provides the following internal connections that can be accessed once the cover plugs and housing cover are removed:



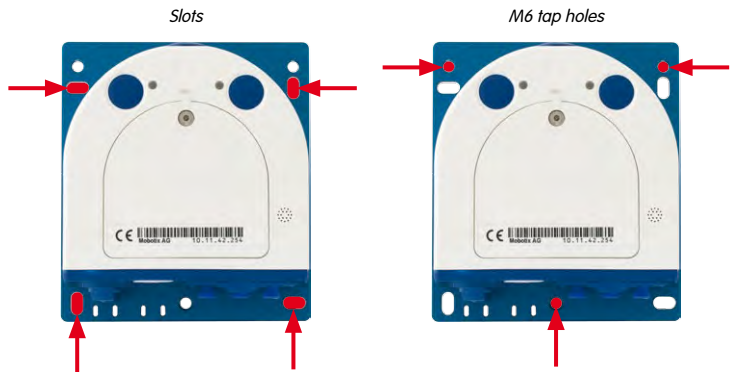
Before laying the Ethernet installation cable, remove the bayonet catch and replace the Ethernet patch cable plug with either one of the additional plugs (M.4/5) or the single wire plug (1.8), depending on the cable used.



1.9.2 S14D FlexMount – Dimensions



Attaching The Base Module





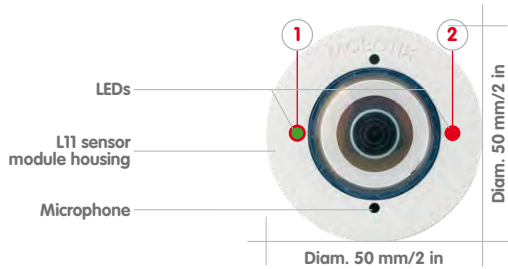
1.9.3 L11 Sensor Module – Scope Of Delivery



Sensor module including status LEDs and microphone

Item	Number	Part Name
3.1	1	Sensor module with glued-on sealing
3.2	1	L11 lens (installed)
3.3	1	Dome (installed)
3.4	1	Cable retainer with bayonet catch
3.5	1	Sealing plug, blue, small (sensor modules, USB, inserted)
3.6	1	Nut (reinforced plastic)

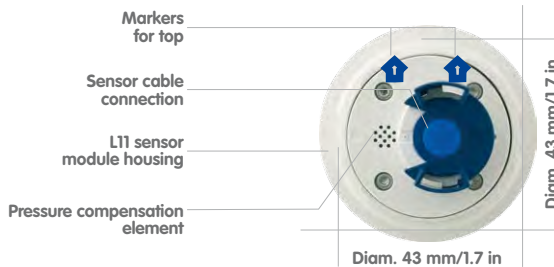
Front View Of Sensor Module



LED defaults:

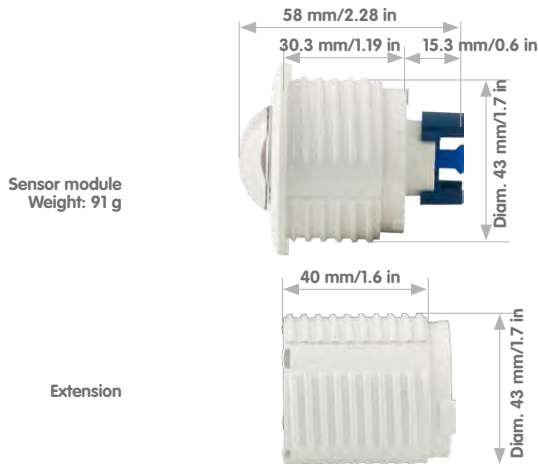
- 1 Power (on), Error (flashes)
- 2 Recording (flashes)

Rear View Of Sensor Module



top = top border of image (North)

1.9.4 L11 Sensor Module – Dimensions



www.mobotix.com,
go to **Products** >
S14 FlexMount and
open the basket that
contains the **Product
Configurator**. Use this
to order the required
parts in any of the
available colors

1.9.5 S14M FlexMount – Scope Of Delivery



Item	Number	Part Name
2.1	1	Camera housing (with base plate)
2.2	1	Lens (installed)
2.3	1	Dome (installed)
2.4	1	Housing cover for S14M (installed)
2.5	3	Stainless steel flat-head Allen screw M4x8 (installed)
2.6	1	Washer
2.7	1	Sealing plug, blue, small (sensor modules, USB, inserted)
2.8	1	Sealing plug, blue, large (Ethernet patch cable, installed)
2.9	1	Cable retainer with bayonet catch (Ethernet patch cable, installed)
2.10	1	Single wire plug, white (Ethernet installation cable, microphone, speaker, MxBus)
2.11	1	MicroSD card, 4 GB (installed)
2.12	1	Rotary plug, SD card, blue (installed)
2.13	1	Ethernet patch cable, 50 cm/20 in, with seal

Installation accessories

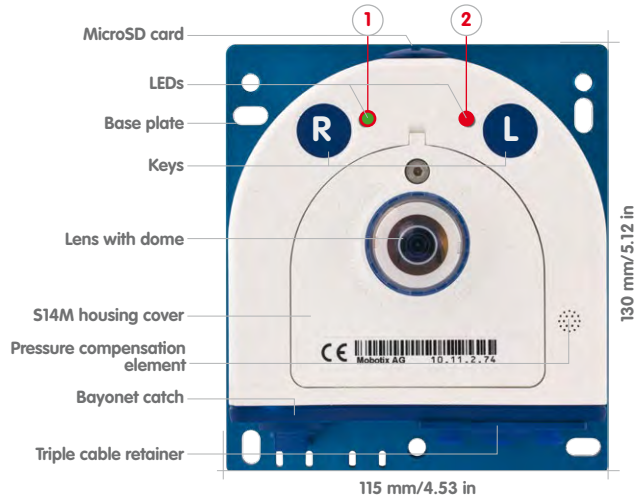
Item	Number	Part Name
M.1	4	Stainless steel washers, diam. 4.3 mm
M.2	4	Dowels 6 mm
M.3	4	Stainless steel wood screws 4x40 mm with PZ 2 driver bit
M.4	2	Cable plug, 5–7 mm, white (Ethernet installation cable)
M.5	1	Cable plug, 3–5 mm, white (Ethernet installation cable)
M.6	1	Allen wrench 2.5 mm
M.7	1	Multifunctional tool (lens, dome, filter inserts)
M.8	1	Cable tie (Ethernet installation cable, microphone, speaker, MxBus)
M.9	1	Screwdriver (screw clamps)

Camera Housing S14M

The MOBOTIX S14M consists of a base plate for attaching the camera, a housing with built-in lens, and a housing cover.

LED defaults:

- 1 Power (on), Error (flashes)
- 2 Recording (flashes)



Externally-Accessible Connections On The S14M

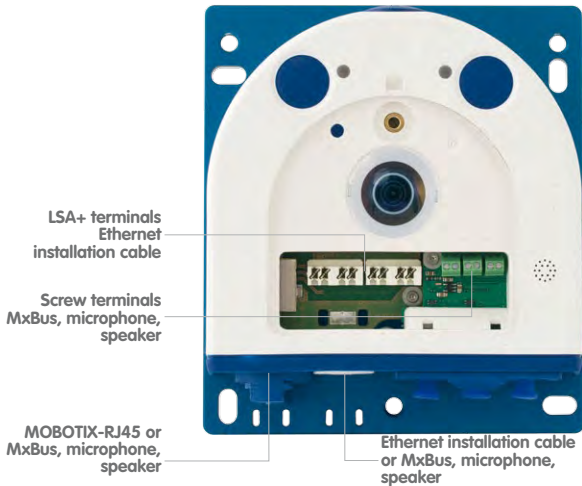
The MOBOTIX S14M provides the following external connections that can be accessed once the cover plugs are removed:



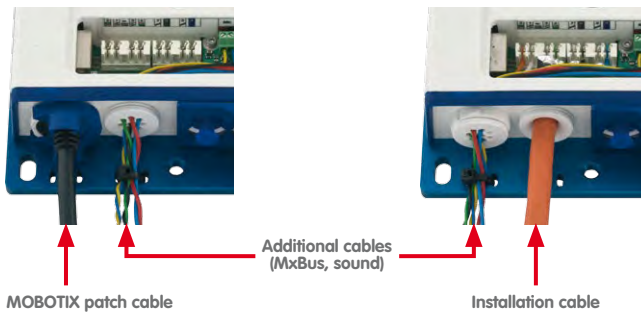
The external connections may only be used with the designated sealed MOBOTIX cables (**MX-OPT-CBL-LAN-1/2/5/10** Ethernet patch cable and **MX-MX-CBL_MU_STR-5** MiniUSB cable).

Internally-Accessible Connections On The S14M

The MOBOTIX S14M provides the following internal connections that can be accessed once the cover plugs and housing cover are removed:



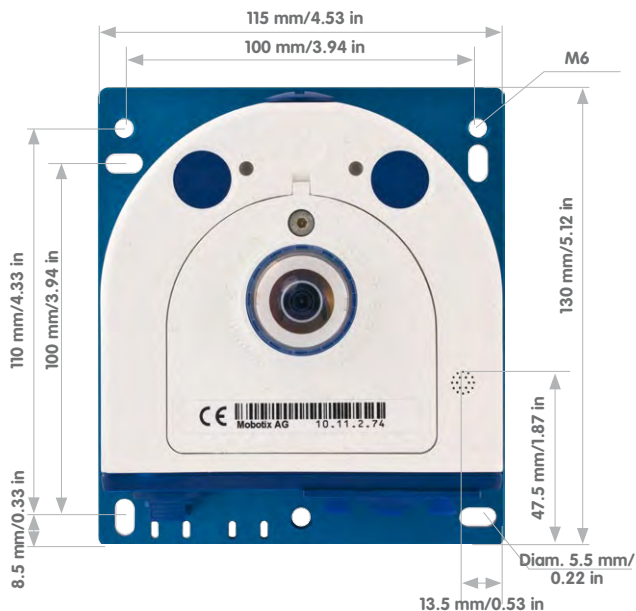
Before laying the Ethernet installation cable, remove the bayonet catch and replace the Ethernet patch cable plug with either one of the additional plugs (M.4/5) or the single wire plug (2.10), depending on the cable used.



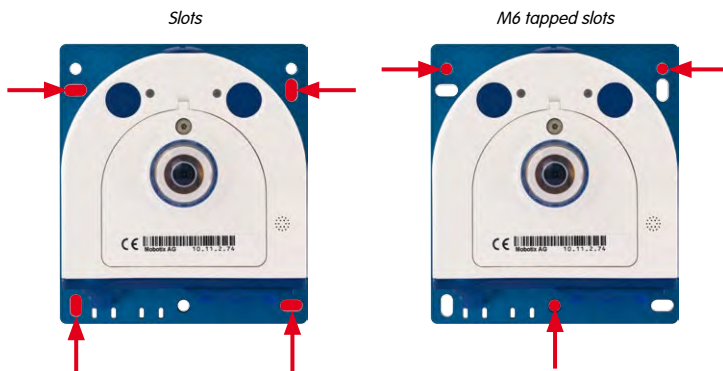
The drilling templates can be found at the end of the manual

Always print or copy drilling templates in their original size

1.9.6 S14M FlexMount – Dimensions



Attaching The Camera Housing





1.10 Available Accessories

1.10.1 Extension For Sensor Module

Order no.: MX-S14-OPT-MK-EX



Each of these extensions increases the installation depth by 40 mm/1.6 in. They can be mounted directly onto the sensor modules themselves or onto existing extensions.



1.10.2 Ceiling/Wall Installation Set

Order no.: MX-S14-OPT-MK-CW



This set contains everything that is needed to attach a sensor module to a ceiling or wall using 15° wedges: 1 × extension (MX-S14-OPT-MK-EX), 2 × 15° wedges (white, black), two wedge sealing rings and one additional nut.

Out of the colored wedges, use the most suitably-colored wedge for the visible area and the other wedge for inserting on the rear.



1.10.3 Connection Cable For Sensor Module

Order no.: MX-S14-OPT-CBL-05/1/2

The sensor module connection cables must never be bent sharply!

This cable, which is up to 2 m/6.6 ft long, connects one sensor module to the S14D. The seals integrated into the cable combine with the bayonet catch on the sensor module and the S14D's sealed port to provide IP65-compliant weatherproofing. The package also contains two hinged ferrites, which are to be installed near the two plug with max. 10 cm/4 in distance to the base module and the sensor module.



1.10.4 MiniUSB Cable to MiniUSB (Straight/Straight Or Straight/Angled)

Order no.: MX-CBL-MU-STR-05/2/5 (straight/straight)

Order no.: MX-CBL-MU-EN-STR-05/2/5 (straight/angled)

With this cable, which is up to five meters long, MOBOTIX add-on modules (MX-232-IO-Box, ExtIO, CamIO) can be connected directly to the S14.



1.10.5 MiniUSB Cable to USB A Socket

Order no.: MX-CBL-MU-STR-AB-05/2/5 (straight)

USB-based storage media (for example, USB hard drives) can be connected directly to the S14 with this cable, which is up to five meters long.



1.10.6 Ethernet Patch Cable For Bayonet Catch

Order no.: MX-OPT-CBL-LAN-1/2/5/10

(length: 1 m/2 m/5 m/10 m)

The MOBOTIX-developed special cable can be installed in a waterproof manner and has an integrated sealing gasket. Every S14 ships with a 0.5-m-long cable as standard, which can be exchanged for a patch cable up to 10 m/33 ft in length.



1.10.7 NPA-PoE-Set

Order no.: MX-NPA-PoE-EU and MX-NPA-PoE-INT (Version EU and Version INT)

Order no.: MX-CBL-NPA-BAT-2 (battery cable for mobile voltage sources)

This is a multifunctional PoE injector according to the IEEE 802.3af standard – with three connectors (for network, camera/PoE device, PC), universal power supply unit with interchangeable adapter plugs and crossover function. The NPA-PoE-Set connects and remotely supplies a S14 with power via an Ethernet cable up to 100 m/110 yd in length. The blue adapter can also be connected to mobile voltage sources from 12 to 42 V DC by means of an additionally available battery cable. The "EU" version of the NPA-PoE-Set is supplied as standard with a European adapter, while the "INT" version includes four adapters (EU, USA, UK, AUS).



1.10.8 MX-Patch-Box

Order no.: MX-OPT-Patch1-EXT

This is a universal network connector for installation cables, MOBOTIX patch cables and standard patch cables (protection class IP65, -30°C to +60°C/-22°F to +140°F). The MX-Patch-Box can be used to connect the patch cable of an IP device with the network installation cable (for example, Cat 5) or network patch cable (RJ45 connector) in a weatherproof manner.



S14 provides an option for directly connecting the installation cable

1.10.9 MX-NPA-Box

Order no.: MX-OPT-NPA1-EXT

The MX-NPA-Box is a weatherproof PoE injector conforming to the IEEE 802.3af standard and is designed to connect to a MOBOTIX camera external voltage sources (12 to 57 V DC).

The MX-NPA-Box is equipped with the PatchBox's weatherproof and extremely compact exterior housing (protection class IP65, -30°C to $+60^{\circ}\text{C}$ / -22°F to $+140^{\circ}\text{F}$), which means it can also be installed in the space of the Outdoor Wall Mount. MX-NPA-Box Interfaces: Camera via patch cable, Ethernet via LSA+ and external voltage source (12 to 57 V DC is possible).



1.10.10 MX-GPS-Box

Order no.: MX-OPT-GPS1-EXT

This box primarily serves as a high-precision time source for systems without an Internet connection. The IT and Secure models additionally provide triggering of GPS-based events (reaching or moving away from a specified position; exceeding or not reaching a specified speed). The MX-GPS-Box can be connected as an add-on module to all MOBOTIX cameras with an MxBus interface.



The MX-GPS-Box has the same compact exterior housing as the MX-Patch-Box and the MX-NPA-Box (IP65 protection class, -30°C to $+60^{\circ}\text{C}$ / -22°F to $+120^{\circ}\text{F}$). Note that this box should not be installed below other wall-mounted units. It should be installed on the exterior of the building with a large section of open sky above it, which ensures the best possible reception from GPS satellites and thereby the highest possible accuracy of the received GPS data. The maximum length of the MxBus cable (diameter: 0.8 mm) is 50 m/55 yd.

1.10.11 MX-232-IO-Box

Order no.: MX-OPT-RS1-EXT

This box provides the signal inputs and outputs as well as the RS232 (serial) interface. It replaces the connections that were handled on the older camera models via a D-Sub 15-HD connector. The MX-232-IO-Box can be connected as an add-on module to all MOBOTIX cameras with an MxBus or USB interface. The maximum length of the MxBus cable (diameter: 0.8 mm) is 50 m/55 yd. If the MiniUSB connection is used, the maximum cable length is 5 m/16.4 ft.



1.10.12 ExtIO Function Expansion

Order no.: MX-ExtIO

The device, which is suitable both for on-wall and in-wall installations, contains a powerful speaker, microphone, infrared motion sensor, ambient temperature sensor, two input and two output contacts and two illuminated buttons. It is ideal for door communication, elevators, access control, etc. The ExtIO is suitable for use as direct connection to the S14 via a MiniUSB cable (max. 5 m), which can be ordered separately, or as a network connection via the PoE switch.



1.10.13 Mx2wire+ Media Converter

Order no.: MX-2wirePlus-Set-PW

The Mx2wire+ system allows an Ethernet network with PoE to be set up via two-wire cables, which saves users from having to lay several hundred meters of Ethernet cable. For example, an existing two-wire cable of an analog video camera can be reused to connect a high-resolution and modern IP network camera. Mx2wire+ is delivered in the standard wall outlet frame in different designs; however, it can also be used with the available on-wall socket that is included.



1.10.14 Product Preview



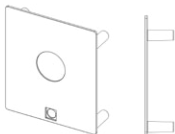
Sensor modules with focal lengths 32, 43, 65 and 135 mm*



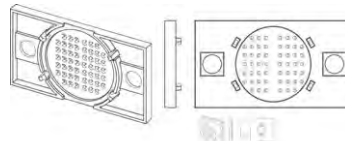
Spring-loaded frame* for easy mounting of sensor modules



SurroundMount* with 2 x L11



For the S14M and microphone insert



For the speaker and microphone

Installation frame* with self-adhesive rear side for quick mounting

* Product Preview:
www.mobotix.com,
go to Products > S14
FlexMount to view
and order further
accessories for the
MOBOTIX S14 system

2 INSTALLATION

The S14 FlexMount is designed for concealed installation in ceilings, walls, behind panels or in existing or specially manufactured housings. The independent sensor models, each with a max. 2 m/6.6 ft long cable, mean the S14D can offer a number of options when selecting the installation location. The installation position of the sensor modules is crucial here. The camera module itself can then be installed in an appropriate place on the wall or ceiling (taking the maximum cable length to the sensor modules into account).

The following questions should be answered before mounting the MOBOTIX S14:

1. Where and how will the camera be mounted?
2. Where and how should the sensor modules be mounted?
3. What accessories might be needed?
4. How is the camera connected to the network and how is the power supplied?
5. How are the connections furnished from the building?
6. What cabling considerations are necessary?

The following sections in this chapter should answer all these questions. If anything is unclear or you have more questions, please contact your MOBOTIX partner or MOBOTIX Support directly. Contact information can be found at www.mobotix.com under **Support**.

2.1 Determining The Installation Position

The installation options indicated in both the following sections are examples of the most common applications for a S14 FlexMount. Many other installation ideas (for example, with customized lens units) can also be successfully implemented thanks to the robust weatherproof design (IP65) and compact shape of the sensor modules and the camera housing.

Please remember that:

1. The S14D sensor modules must always be mounted so as to avoid the constant accumulation or any collection of water or other liquid around the cable connection on the back of the housing. Otherwise this could lead to a build-up of condensation inside the sensor module and its subsequent failure.
2. Unused connectors on the housing of the S14 must always be sealed using the plugs installed as standard on delivery as well as the corresponding retainers.
3. Only original MOBOTIX cables should be used to connect the sensor modules, patch cables and USB cables in order to guarantee weather resistance according to IP65. The plugs supplied must be used if additional cables are required (MxBus, audio).
4. The lower (blue) part of the camera housing must face downwards so that any water running off the housing cannot accumulate around the connectors.

2.1.1 Positioning A Hemispheric Camera

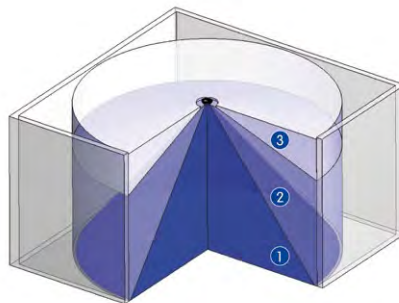
A hemispheric camera is primarily suited to providing an excellent overview, and less suitable for more exact details. Due to its inherent physical and optical properties, the precision of the lens decreases as the distance from the lens grows. This means that the maximum usable image area greatly varies with the purpose of the camera. People, for example, may be identified very well at distances of up to 1.5 m/5 ft, and with sufficient detail at up to 3 m/10 ft. Objects can be recognized even at distances of 5 m/16.4 ft and more from the camera.



Discreet ceiling installation with minimally visible technology

Ceiling-Mounted

A single S14 sensor module can monitor an entire room right into each of the four corners (360° Panorama View) thanks to its hemispheric lens. The camera should ideally be positioned on the ceiling in the center of the room. Rooms with a square floor area of up to approx. 40 m² generally allow the recognition of detail even at the borders of the full image. If you would only like to know if persons enter a room or to monitor specific objects, rooms with a floor area of well over 100 m² can also be monitored using a single sensor module.

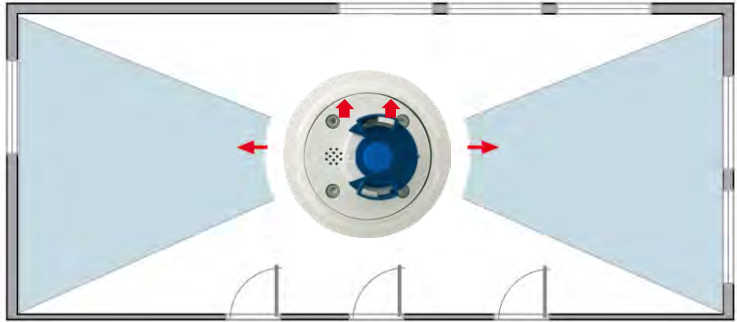


Capture of entire room

The **image quality** (precision) diminishes as the distance of an object to the camera focus point increases: 1 very good, 2 good, 3 satisfactory

Rectangular Rooms

When viewing a 360° panorama image in the browser, you will notice that the top and bottom of the image are not fully visible, i.e., some image information has been clipped. This is not the fault of the camera, but intended behavior that aims at achieving the best possible utilization of the image sensor by the camera software. Bearing this in mind, it is advisable to turn the S14 sensor module in rectangular rooms so that the area marked with two arrows or the rotary plug in a S14M (= top border or North of displayed image) is pointing towards one of the longer walls of the room.

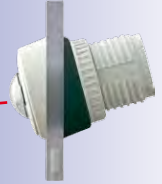


Original full image
(ceiling installation in
a rectangular room)

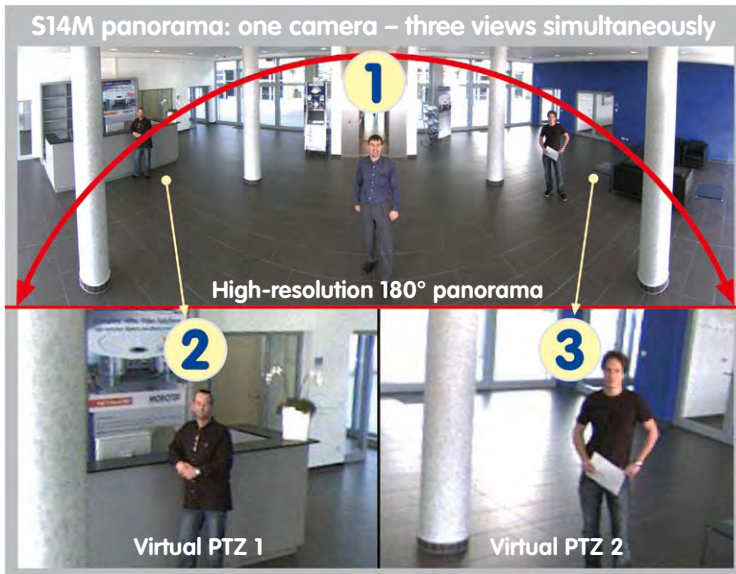


Wall-Mounting

To make optimal use of the high-resolution 180° panorama functionality of a hemispheric camera, the lens or sensor module must be mounted on an inside or outside wall. The entire hemisphere of the room directly in front of the camera is then effectively monitored, from the wall on the left of the camera to the wall on the right. Corresponding fine-tuning in the user interface software allows the displayed panorama image to be adjusted to different practical applications at any time.

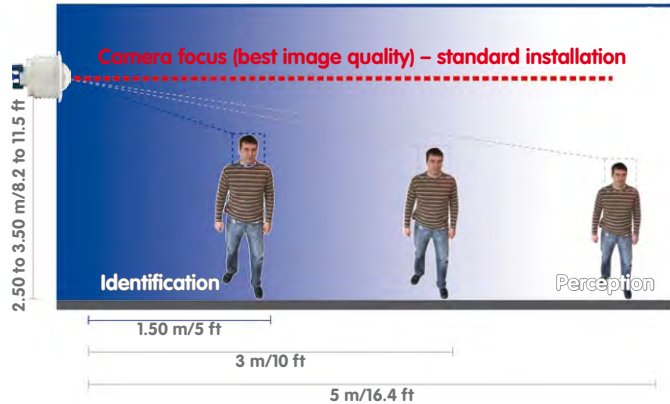


15° wedge for sensor module

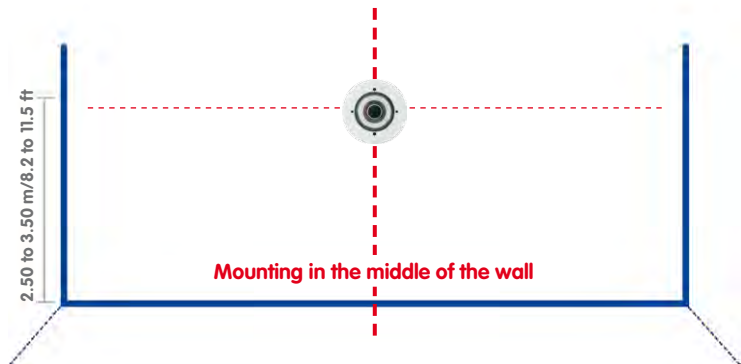


Selecting An Appropriate Camera Position

During installation, ensure that the camera is focused on the most important areas of the room as directly as possible in order to provide the desired level of detail recognition (camera focus). The S14 should be installed on a wall such that the two arrows on the back of the sensor module housing (S14D) or the rounded side of the camera housing (S14M) are pointing towards the ceiling.



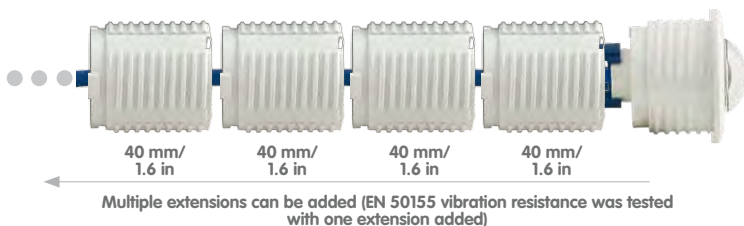
Recommendation:
Mounting the camera in
the middle of the wall



To install the sensor module on thicker walls or with the 15° wedge (see next section), the MOBOTIX offers an extension that is attached to the sensor module at the back and secured with a bayonet catch.

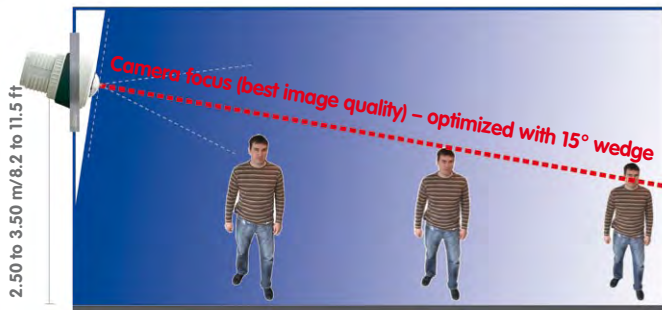
Determining The Installation Position

Greater wall thicknesses can also be bridged by attaching several extensions. The sensor module is secured from behind by a nut and a locknut.

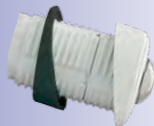


Wall Installation With 15° Wedge For Image Optimization

Wall mounting with lenses tilting downwards is recommended in many cases for optimizing image quality. In particular for wall installations that must be carried out at greater heights for technical or other reasons (over doors, windows, etc.), adding a slight tilt to the camera, and thus also the lens, will return better results, as the center of the lens is then focused more directly on the center of activity in the room (optimal utilization of lens capabilities). MOBOTIX therefore offers easy to install mounting accessories with a 15° tilt for the S14D sensor modules.

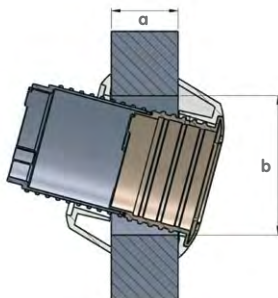


Best image quality
with wall-mounting
with 15° wedge



Size Of The Drilling Holes With Different Material Thicknesses

Material thickness a		Diam. of drilling hole b	
mm	in	mm	in
5	0.20	47	1.85
10	0.39	48	1.89
15	0.59	50	1.97
20	0.79	51	2.01
25	0.98	52	2.05
30	1.18	53	2.09
35	1.38	55	2.17
40	1.57	57	2.24



2.1.2 S14D FlexMount Installation Options

Using One Or Two Sensor Modules

You can decide for yourself with the S14D whether you want to use the camera with one or two sensor modules. You can upgrade or downgrade the system at any time.

Sensor modules including status LEDs and microphone



www.mobotix.com, go to **Products > S14 FlexMount** and open the basket that contains the **Product Configurator**. Use this to order the required parts in any of the available colors

Product Preview:
Go to **Products > S14 FlexMount** to view and order accessories for the MOBOTIX S14 system

The S14D with a single hemispheric L11 sensor module therefore essentially offers the same range of functions as a standard hemispheric camera like the Q24M, but has the added advantage that it can be installed even more inconspicuously and almost completely hidden. While the sensor modules can record audio data via integrated microphones, an external speaker can be connected directly to the camera and positioned in an appropriate place. If the sensor module microphones are not used, an additional microphone can also be connected directly to the camera.

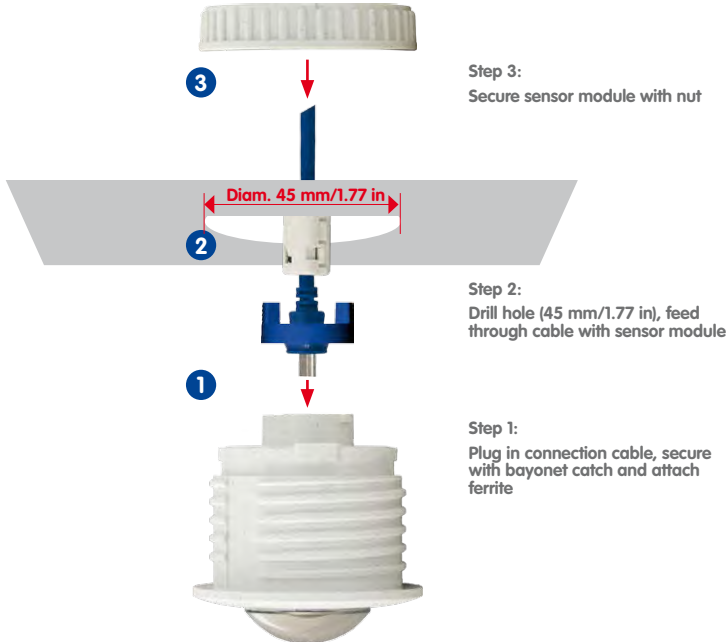
Hemispheric Day And Night Camera (S14D With Sensor Modules D11 And N11)

The S14D is the first hemispheric dual camera for use in extremely variable lighting conditions equipped with two L11 lenses each with a black/white and color sensor. It is important in terms of mounting, whether on a wall or ceiling, that both the camera's sensor modules are positioned directly next to each other and in parallel (arrows on sensor modules pointing in the same direction) in order to see the same image area as a color image during the day and as a black/white image at night.



Ceiling-Mounted

Indoor installation is mostly on suspended ceilings and is extremely easy. A round hole with a diameter of 45 mm/1.77 in is all that is needed, through which a S14D sensor module with connection cable and attached ferrite is pushed down through the ceiling panel, fixed from behind using a nut and then connected to the concealed base module hidden behind a ceiling panel (connector and lock).



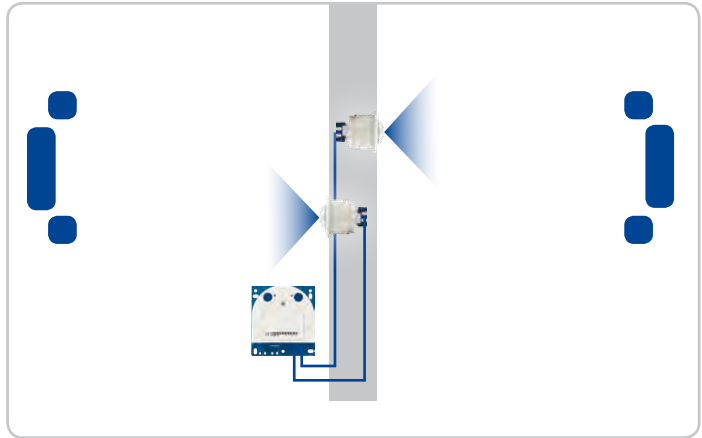
It should be ensured when selecting installation sites that each of the sensor cables do not exceed 2 m/6.6 ft. The theoretical maximum distance between the two sensor modules of a S14D where the base module is placed centrally is therefore 4 m/13.1 ft.

Caution

If there is a risk of water collecting on the back of the sensor modules (for example, in outdoor areas or in the event of extreme humidity), the modules should not be installed pointing downwards!

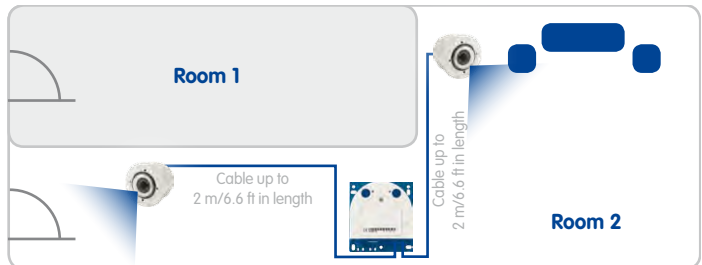
The S14D can, however, also be deployed at shorter distances between the two sensor modules with surprising results:

- Two adjacent areas separated by a dividing wall, shelves, floor or other form of screen can be captured with no blind spots using a S14D.



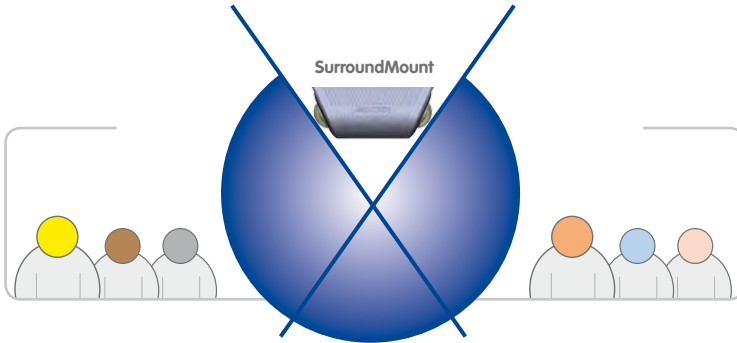
The S14D monitors two separate rooms

- In L-shaped rooms, both sensor modules are simply positioned at right angles. A S14D therefore captures the entire room with no blind spots.



The S14D can see "around corners"

- Installing the two sensor modules next to one another, but pointing in opposite directions in particularly long, narrow rooms (for example, hotel corridors, buses, aircraft, railroad cars, etc.) delivers double hemispheric images of up to 6 megapixels that, in terms of sharpness of detail, significantly outperforms a single hemispheric camera with just one lens. For these kinds of installations, MOBOTIX will soon offer an appropriate mount in the range of accessories available for the S14 (SurroundMount). The slight downward tilt of the two sensor modules allows the area directly underneath them to be captured with no blind spots.

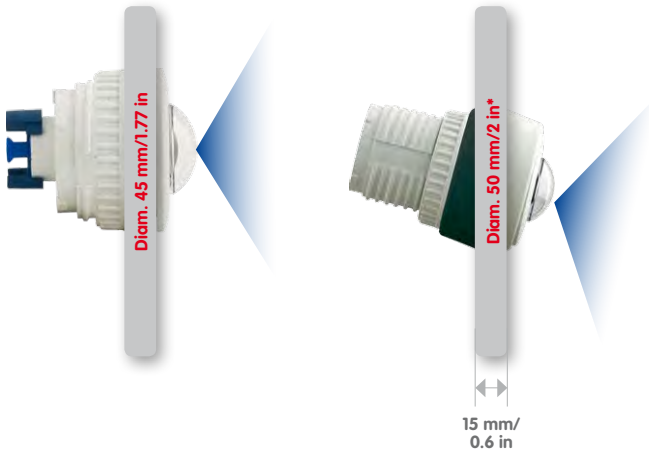


Product preview:
SurroundMount
module with 2 x L11
sensor modules

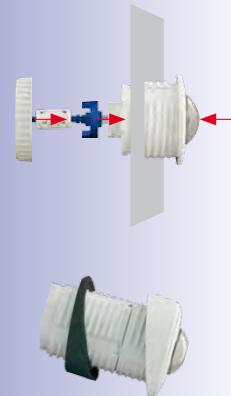
S14D SurroundMount:
6 megapixel 360° camera

Wall-Mounting

Mounting a S14D sensor module on a wall, for example, on basic partition walls or fake walls with cavities behind the wall covering, is just as easy as mounting on a ceiling. Drill a hole 45 mm/1.77 in diameter, fit the sensor module, fix from behind with a locknut and connect to the base module. Depending on the installation height and the required camera focus, the camera can be installed with or without the wedge with 15° tilt available as an accessory.



Mounting with or without
15° wedge (accessories)



MOBOTIX also offers the appropriate installation accessories for mounting the sensor module on thicker walls. Longer "tunnel holes" through a wall can also be bridged using several extension pieces (each approx. 40 mm/1.6 in). The maximum wall thickness is therefore only limited by the length of the sensor cable depending on the installation position of the base module, which is in theory 2 m/6.6 ft.

* Hole diameters vary depending on material thickness (see «Size Of The Drilling Holes With Different Material Thicknesses» in Section 2.3.2, «Attaching And Connecting The S14D Sensor Modules»)

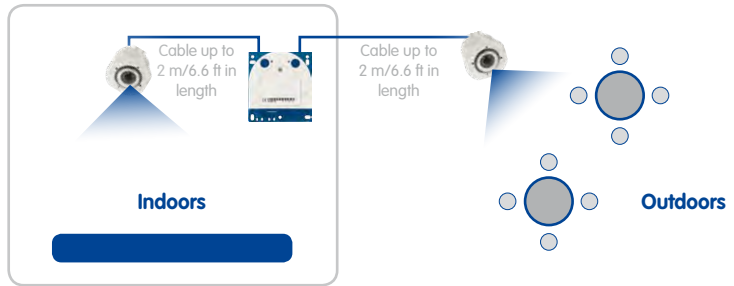
Mixed Ceiling- And Wall-Mounting

By mounting a sensor module on the ceiling of a room and at the same time attaching the second sensor module to an outside wall of this room, both the inside and the outdoor area can be captured with a single S14D at minimal installation cost.

Example: Kiosk

Simultaneous capture of the entire sales floor and the area outside the entrance with stand-up tables.

S14D simultaneously monitors indoor and outdoor areas

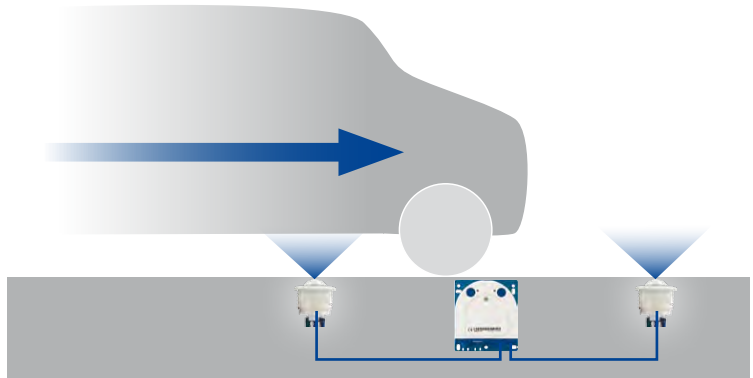


Floor-Mounting

Mounting sensor modules on the floor can also make sense for industrial uses or in areas where there are no people. Examples of such uses are vehicle ramps where the vehicles can also be easily captured from below.

Place sensor modules centrally between the wheels (along vehicle longitudinal axis). Sensor modules must be protected against dirt at the top by glass panels or similar!

Do not drive over or step directly on the camera or sensor modules!



2.1.3 S14M FlexMount Installation Options

Unlike the S14D, the S14M has just one lens, which does not have a flexible sensor cable, but is directly connected to the camera housing. Contrary to conventional mono cameras, the S14M has come up with a very neat trick:

The camera housing can be mounted concealed behind a wall up to 6.4 mm/0.25 in thick (wood paneling, stainless steel panel, etc.) with a round opening measuring 34 mm/1.34 in. The S14M can simply be fixed behind the wall and leave only the lens visible.

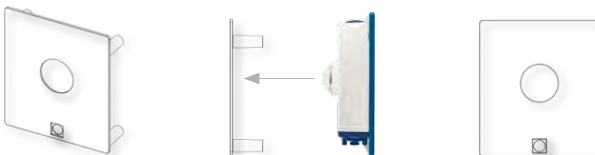


This allows the following installation options:

- Wall- and ceiling-mounting behind correspondingly thin or countersunk panels/cover plates.
- Individual mounting solutions such as installation in industrial equipment, paneling, air ducts, mail boxes, homemade mounts, etc.

Note on Installation Frame*

This installation frame with self-adhesive rear side allows quick mounting of the S14M and a microphone capsule behind stainless steel panels or similar materials. A similar installation frame is also supplied for the speaker.



***Product Preview:**
www.mobotix.com,
 go to **Products > S14 FlexMount** to view
 and order further
 accessories for the
 MOBOTIX S14 system

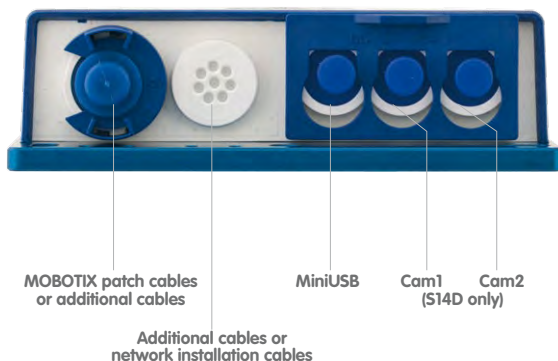
2.2 Before Mounting

This section of the manual provides an overview of the variety of S14 connection options, the preparatory steps and the tools required for mounting.

2.2.1 Overview Of Cable Connections

The following cables can be used with the S14 (see also *Section 1.10, «Available Accessories»*):

- **MOBOTIX patch cable:** This supplied MOBOTIX cable is designed for direct connection to the **MX-Patch-Box**, the **MX-NPA-Box** or a standard network port (only in indoor areas).
- **Ethernet installation cable:** As an alternative to the **MOBOTIX patch cable** (see above) an Ethernet installation cable can also be fitted directly onto the integrated LSA cutting clamp.
- **MOBOTIX USB cable with MiniUSB connector:** This MOBOTIX cable provides the required impermeability, even in adverse weather conditions, and thereby prevents corrosion of the connectors, for example, on an external USB hard drive.
- **Sensor cable for the sensor modules (S14D only):** The sensor modules are connected to the S14D via this cable. A separate cable is required for each sensor module (max. 2 m/6.6 ft).
- **Additional cable for MxBus connections, microphone and speaker:** Additional MOBOTIX modules can be connected via this multi-wire cable. The other camera opening is used for this cable or for single wires, depending on which connection is used for network cabling (patch or installation cable).



Caution

Only **MOBOTIX cables** may be used for the **Ethernet and USB connection** as well as **to the sensor modules (S14D)** to ensure the camera remains permanently watertight.



Ethernet
for LAN



MiniUSB



Sensor cable

Unused connections must be secured using appropriate cable plugs and by closing the corresponding locks to protect the inside of the housing against water and dust.

Removing MOBOTIX Cables And Plugs

The corresponding lock must first be removed or released to remove one of the cables or plugs indicated above from the S14:

Patch cable



1. Turn the bayonet catch to the left.
2. Remove the bayonet catch.
3. Remove the cable/plug.

MiniUSB/sensor cable



1. Pull the triple retainer upwards (away from the base plate) until it clicks into place.
2. Remove the cable/plug.

Inserting And Locking MOBOTIX Cables And Plugs

The corresponding lock must be applied or closed again after inserting one of the cables or plugs indicated above into the S14:

Patch cable	MiniUSB/sensor cable
 1. Insert the cable/plug. 2. Attach bayonet catch. 3. Turn the bayonet catch to the right.	 1. Insert the cable/plug. 2. Push the triple retainer down (towards the base plate) until it clicks into place.

2.2.2 Notes On Cable Lengths And Power Supply

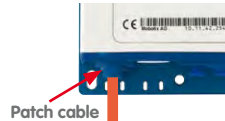
- Power is supplied to the camera via the camera Ethernet connection (patch or installation cable). We recommend using a MOBOTIX PoE adapter or another similar high-quality PoE product to loop-in the power supply:
 - **One camera:** with the PoE adapter (MX-NPA-PoE or MX-NPA-Box)
 - **Multiple cameras:** with PoE products conforming to IEEE 802.3af (PoE switch)
- The **maximum length** of the network cable for power supply over an Ethernet cable is **100 m/110 yd**.
- Make sure that you only use switches or routers that support the **10/100 Mbps network interface** of the camera.
- We highly recommend using uninterruptible power supplies (UPS) to provide backup power.
- If you are using IEEE 802.3af or IEEE 802.3at (PoE+) Power-over-Ethernet network components to supply power to MOBOTIX cameras, make sure, if possible, that these components do not have a fan. Since the power consumption of MOBOTIX cameras is very low compared to other products, the reliability of the entire system is increased, thus extending the life of these components.
- Devices with a combined maximum power consumption of 2.5 W may be connected to the internal MxBus connection. If additional devices are connected to the MxBus connection **and** to the MiniUSB port, the power consumption of all connected appliances should not exceed 4 W.

2.2.3 Network Connection With MOBOTIX Patch Cable

The supplied **MOBOTIX patch cable** can be used to connect the camera to an **MX-Patch-Box**, an **MX-NPA-Box** or to a standard network port.

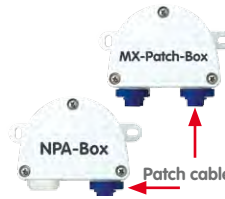
Connecting The Patch Cable To The Camera

First remove the blue bayonet catch and the blue sealing plug in the left-hand connector on the S14. Then insert the MOBOTIX patch cable into the camera and secure the cable using the bayonet catch.



Connecting The Patch Cable To An MX-Patch-Box, MX-NPA-Box or Standard Network Port

First remove the blue bayonet catch and the blue sealing plug in the right-hand connector on the box to establish the network connection to an MX-Patch-Box or MX-NPA-Box. Then insert the MOBOTIX patch cable into the box and secure the cable using the bayonet catch.

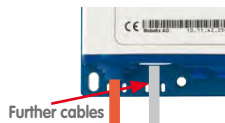


More information on installing an **MX-Patch-Box** or **MX-NPA-Box** is available at www.mobotix.com under **Products > Accessories > Functional Boxes**.

Insert the MOBOTIX patch cable of the S14 into the network port for standard connections (only permitted in indoor areas).

Connecting Peripheral Devices (MxBus, Microphone, Speaker)

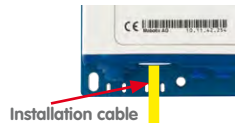
The opening provided for the installation cable must be used for all other cables that are connected to the camera when using the MOBOTIX patch cable. Depending on the cable used, the single wire plug installed must be replaced with one of the other cable plugs (M.4/5).



The cable used must be fixed to the circuit board using one of the cable ties supplied (M.8) to ensure that less strain is placed on the cable. The individual cable wires must be fixed on the screw clamps using the the screwdriver supplied (M.9).

2.2.4 Network Connection With Installation Cable

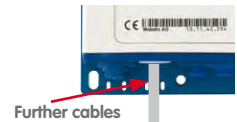
As an alternative to connection to an MX-Patch-Box, MX-NPA-Box or standard network port, you can also connect the S14 directly to an **installation cable**. Since the housing cover of the camera must be opened for this purpose, this working step **in a S14M must be carried out before** mounting the camera as the housing cover is no longer accessible once it has been mounted.



The installation cable is fixed onto the circuit board before fitting the wires onto the LSA cutting clamps using one of the cable ties supplied (M.8) to ensure less strain is placed on the cable and that the camera is earthed correctly.

Connecting Peripheral Devices (MxBus, Microphone, Speaker)

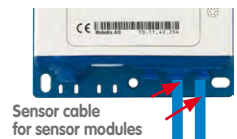
The opening provided for the MOBOTIX patch cable must be used for all other cables that are connected to the camera when using an installation cable. The blue bayonet catch and the blue sealing plug in the left-hand connector must be removed for this purpose. The single wire plug or one of the other cable plugs (M.4/5) is then pushed into the opening, depending on the cable used. The bayonet catch will no longer be used.



The cable used must be fixed to the **base plate** using one of the cable ties supplied (M.8) to ensure that less strain is placed on the cable. The individual cable wires must be fixed on the screw clamps using the the screwdriver supplied (M.9).

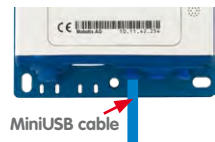
2.2.5 Using Sensor Modules (S14D Only)

One or two sensor modules can be connected via both right-hand connectors in the S14D. For this purpose, the lock is pulled forward, the central and right-hand (or only the central plug if only one sensor module is used) is removed and the corresponding sensor cable is inserted. The connectors are waterproof again once the lock is pressed down.



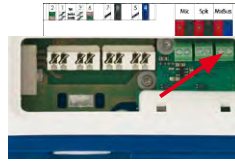
2.2.6 Using The MiniUSB Cable

Existing add-on modules such as the MOBOTIX ExtIO (USB) or external USB hard drives can be connected via the MiniUSB connector. For this purpose, the lock is pulled forward, the left-hand plug is removed and the MiniUSB cable is inserted. The connectors are waterproof again once the lock is pressed down.

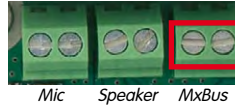


2.2.7 Using MxBus Modules

The MxBus camera connector is located under the housing cover (clamps 5 and 6 of the screw clamps) and allows the operation of additional modules for expanding functionality (e.g. connection of an MX-GPS-Box for determining time and position). MxBus was optimized specifically for the use of existing two-wire cables.



The terminal connector has two connectors to connect an MxBus module (other MxBus modules can then be connected from there). The length of the entire MxBus cable may not exceed 50 m/55 yd.



Note

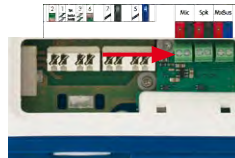
The MxBus wires that are to be stripped at the end should always be fed into the camera through appropriate plugs before mounting. If the single wire plug is used, one wire must be pushed through a hole in the plug.



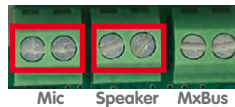
Do not mix up the polarity of the cables during installation. Select a consistent cable color for +/- in the entire MxBus system (for example, red = +, blue = -).

2.2.8 External Audio Support (Microphone/Speaker)

The camera connector for an external microphone and an external speaker is located under the housing cover (clamps 1 and 2 of the screw clamps for microphone, clamps 3 and 4 for speaker).



An external microphone (red box) and an external speaker (red box) with the following technical data can be connected on the terminal connector:



- **Microphone:** $V_s = 2.0 \text{ V}$, $R_L = 2.2 \text{ k}\Omega$, sensitivity $-35 \pm 4 \text{ dB}$, for example, Panasonic Microphone Capsule WM61
- **Speaker:** Max. power output 400 mW at 8 Ohms impedance, for example, Visaton Speaker K36WP or K50WP

Replace the MicroSD card only if the camera is disconnected from the power supply!

Push the MicroSD card in once (Push), then pull out using tweezers



2.2.9 Replacing The MicroSD Card

If the 4 GB MicroSD card supplied needs to be replaced (for example, with a 64 GB MicroSD card), it is best to do so **before** the camera is installed. **MicroSD cards should only be replaced when the camera is disconnected from the power supply.**

1. **Remove rotary plug:** Loosen the rotary plug at the top of the housing, for example, using a suitable coin and remove the plug.



2. **Remove the MicroSD card:** Carefully push the MicroSD card into the holder using a pair of tweezers until you hear a **click**. The card is now sticking out slightly and can be removed using the tweezers.



3. **Insert the MicroSD card:** Push the MicroSD card as shown (electrical contacts pointing towards the front) into the card slot using a pair of tweezers. Make sure that you hear a **click** when the card is inserted. The card is now locked and can be used. **If you are using a new MicroSD card, it needs to be formatted first** (see Section 3.4.2, «Formatting The MicroSD Card»).



4. **Attach the rotary plug:** Insert the rotary plug as shown and screw it tight using a coin (approximately two turns, the plug slot is pointing forwards).



2.2.10 Tools Required For Installation

Please make sure that all the camera components are included in the original packaging (see Section 1.9.1, «S14D FlexMount – Scope Of Delivery», Section 1.9.3, «L11 Sensor Module – Scope Of Delivery» and Section 1.9.5, «S14M FlexMount – Scope Of Delivery»).

Additional Tools/Materials Required

- Any additional materials required for attaching the camera to a ceiling/wall (four wood screws including screw anchors and washers) are included in the original packaging.
- **Screwdriver with PZ 2 driver bit**
- Potentially a **power drill and 6-mm drill bit** for screw anchor holes for attaching the base plate
- **Drilling template** for base plate and, where appropriate, sensor module (at the end of this manual)
- **Scissors** to cut out the template

- **Pencil** to mark the drill holes
- Potentially **LSA+ tool** for fitting an installation cable onto the LSA terminals of the camera
- **Hole saw** or **Forstner drill** with 44 to 45 mm/1.77 in diameter for the S14D sensor modules or with 35 mm/1.38 in diameter for the S14M lens
- **Soft cotton cloth** to clean the front of the lens after installation



2.2.11 Preparatory Steps

Make sure of the following before starting to install the camera:

- **Connection with MOBOTIX patch cable:** The network connector has been guided either with an MX-Patch-Box, an MX-NPA-Box or a standard network port (only permitted in indoor areas) into the vicinity of the mounting position of the camera.
- **Connection with installation cable:** If a network installation cable is used instead, it may not conduct any voltage and may not be connected to the network.
- **Even surface:** Make sure before attaching the camera that the surface is even so that the base plate of the camera does not move.
- **Pressure equalization element:** This element on the housing of the S14 and the sensor modules must be kept free to enable pressure equalization element of the camera housing.



S14D/S14M
FlexMount (front)



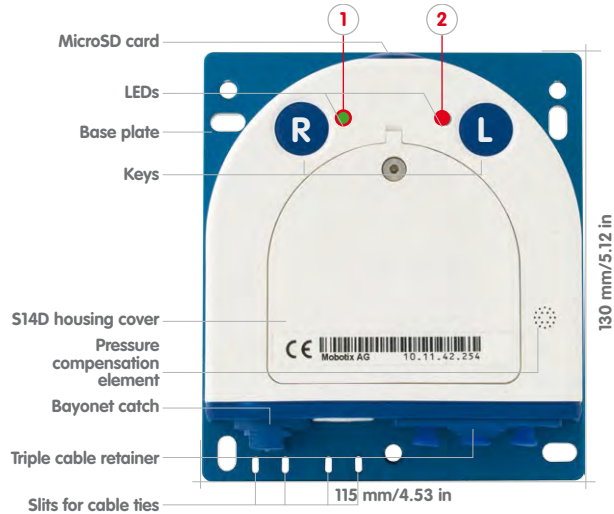
Sensor module (rear)

Do not cover pressure
equalization elements

LED defaults:

- 1 Power (on), Error (flashes)
- 2 Recording (flashes)

2.3 Installing The S14D FlexMount



The drilling templates can be found at the end of the manual

Always print or copy drilling templates in their original size

Use the **drilling templates supplied** (at the end of the manual) to mark the position for drilling the dowel holes for the camera and the sensor modules. Make sure that it is not scaled down when printing or copying the drilling template.

Caution

Make sure the camera is mounted on an **even surface**. If this is not the case, there is a risk that the housing plate will move and the housing will begin to leak.

The **torque** for the **housing cover screws** is **0.4 Nm**.

2.3.1 Attaching The S14D Base Module

Depending on the system, the base module of a S14D can be installed quickly:

1. If necessary, mark the drill holes at the intended mounting position, drill the holes for the base plate and hammer in the **6 mm dowels** supplied.
2. If this has not been done already, insert the cable tie needed to ensure that less strain is placed on the connection cable into the slot provided below in the base plate without closing it.
3. Screw on the S14D base module using the **4x40 mm screws** included (or other suitable screws) and **washers (with a diam. of 4.3 mm)**.



2.3.2 Attaching And Connecting The S14D Sensor Modules

Before installing the sensor modules, make sure that the sensor cables will reach the intended mounting position without placing a strain on the cables. Further information on the individual camera connectors can be found in *Section 2.2.1, «Overview Of Cable Connections»*.

1. Drill the hole for the sensor module at the intended mounting position (arrow on the back of the sensor module pointing "Up").



2. Connect the sensor cable to the sensor module (turn the blue bayonet catch to the left and lift off, remove the plug, insert the sensor cable, replace the bayonet catch and turn to the right). Make sure that the sensor cables are not sharply bent anywhere!



3. Attach one ferrite at each end of the sensor cable (max. distance to the plug 10 cm/4 in, as shown in the figure).



4. If extensions are required (at least one in sensor module L11 and 15° wedge), they should now be pushed over the sensor cable and joined to the sensor module or extensions that have already been mounted using the bayonet catch (see *Section 2.3.3, «Plugging In And Lifting Off Extensions»*).



5. If a 15° wedge is used, the visible wedge and the wedge sealing must now be pushed onto the cable, the sensor module and any extensions already mounted (the thicker side of the wedge is at the top). Make sure that the **MOBOTIX** lettering at the front of the sensor module is pointing upwards!



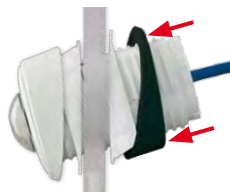
6. Now insert the cable and then push the whole sensor module (including wedge, wedge sealing and extension, if installed) through the hole.

Only **MOBOTIX** cables should be used to connect the sensor modules (see *Section 1.10.3, «Connection Cable For Sensor Module»*)

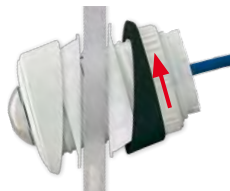
The sensor module connection cables must never be bent sharply!

Make sure **MOBOTIX** lettering is pointing upwards!

7. If a 15° wedge has been fitted, the second wedge sealing and the second wedge must now be pushed over the sensor cable, any installed extensions and the sensor module (the thicker side of the wedge is at the bottom) may need to be shifted to ensure that the nut is properly positioned on the back.



8. Feed the sensor cable through the nut and secure the sensor module and mounted extensions using that nut. If you need to seal off the sensor module against the wall, you should apply silicone sealant before tightening the nut.



9. Attach the sensor cable of the first sensor module to the **Cam1** connector and the sensor cable of the second sensor module to the **Cam2** connector of the S14D (pull the blue triple cable retainer up, remove the plug, insert the sensor cable and push the cable retainer down again).



If you install a S14D with automatic day/night switching, make sure to connect the D11 (day) sensor module on the **Cam1** and the N11 (night) sensor module on **Cam2**

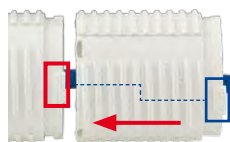
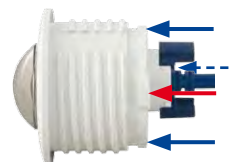


2.3.3 Plugging In And Lifting Off Extensions

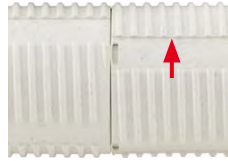
The extensions are fixed onto the sensor modules (or other extensions) with the help of a bayonet catch.

Attaching Extensions

1. Turn the sensor module so that the larger lobe (red arrow on the illustration) is at the front. The other three lobes are smaller and do not protrude (blue arrows).
2. Turn the extension so that the larger lobe on the extension is slightly offset from the lobe on the sensor module (see blue box in the illustration on the right). Push the extension with the notches onto the sensor module.



3. Turn the extension in a clockwise direction until it clicks into place (viewed from the right). The extension will lock automatically and will not turn, even if the nuts are loosened.



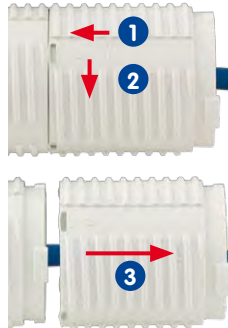
Note

Make sure that the extensions are always connected as described in Step 2. Attaching the extensions incorrectly will damage the bayonet catch and may result in the nuts not being properly attached.

Removing Extensions

Proceed as follows to loosen and undo an extension lock:

1. Push the extension towards the sensor module to unlock it.
2. Turn the extension in an anti-clockwise direction (viewed from the back) to open the bayonet catch.
3. Remove the extension.



2.3.4 Connecting Network Cables And Additional S14D Cables

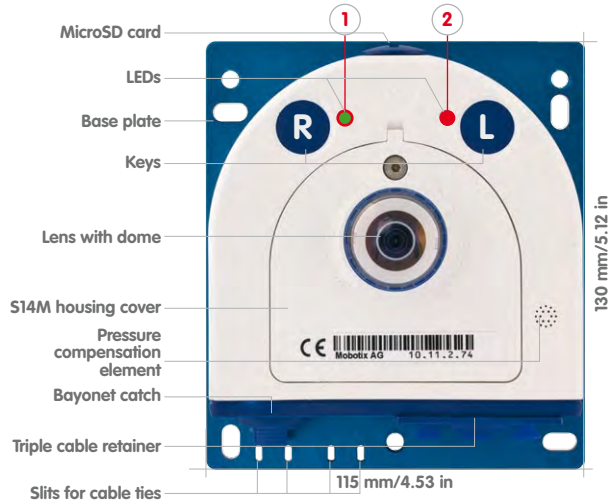
Once you have mounted the S14D and the sensor modules you can connect the network cables of the camera, a MiniUSB cable, if required, and additional cables (MxBus, microphone, speaker) as described in *Section 2.5, «Network And Power Connection, Additional Cables»*.

LED defaults:

1 Power (on), Error (flashes)

2 Recording (flashes)

2.4 Installing The S14M FlexMount



2.4.1 Connecting Network Cables And Additional S14M Cables

As the S14M is mounted in the intended position with the front panel behind, the housing cover cannot be removed after mounting. All the cables to be connected there (Ethernet installation cable, MxBus, microphone, speaker) are then no longer accessible and the connector for the network patch cable can only be accessed with difficulty. The triple lock for connecting the MiniUSB cable can no longer be opened either. This is why you should connect the camera network cables, a MiniUSB cable, if required, and additional cables (MxBus, microphone, speaker) **before mounting the camera** as described in *Section 2.5, «Network And Power Connection, Additional Cables»*.

2.4.2 Attaching The S14M Camera Housing

Use the **drilling template supplied** (at the end of this manual) to mark the position of the drilling holes for the camera. Make sure that it is not scaled down when printing or copying the drilling template.

The drilling templates can be found at the end of the manual

Always print or copy drilling templates in their original size

Caution

Make sure the camera is mounted on an **even surface**. If this is not the case, there is a risk that the housing plate will move and the housing will begin to leak.

The **torque** for the **housing cover screws** is **0.4 Nm**.

Attachment To A Rear Wall

If the S14M is attached with the base plate on a rear wall (and then, for example, to a separate stainless steel cover), the camera can be mounted in just a few steps:

1. If necessary, mark the drill holes at the intended mounting position, drill the holes for the base plate and hammer in the **6 mm dowels** supplied.
2. If this has not been done already, insert the cable tie needed to ensure that less strain is placed on the connection cable into the slot provided below in the base plate without closing it.
3. Screw on the S14M with the **4×40 mm screws** included (or other suitable screws) and **washers (with a diam. of 4.3 mm)**.
4. Mark the hole for the camera lens in the cover using the drilling template for the S14M and drill a hole there with a 35 mm/1.38 in diameter.
5. Place the cover over the camera and the cables.



Attachment Behind Screens, Walls or Ceiling Elements

This type of mounting can be completed using various attachment elements.

- Bonded nuts with stud bolts, nuts and washers as shown in the illustration.
- Thicker materials (greater than 6.4 mm/0.25 in) need to be machined accordingly in order to accommodate the camera housing. They can then be attached using anchor nuts or screw sockets as well as stud bolts, nuts and washers or similar.

Make sure that there is enough space behind the mounting surface for the camera and that the pressure equalization of the camera is also free after mounting.

1. Mark the hole for the camera lens in the cover using the drilling template for the S14M and drill a hole there with a 35 mm/1.38 in diameter.
2. Mark the places on the mounting surface where the nuts are to be placed with the help of the drilling template.
3. Tighten the stud bolts, nuts and washers.
4. Place the camera from behind onto the prepared attachment elements and screw the camera on tightly (secure nuts with a screw locking device to prevent them from becoming loose).



MOBOTIX offers a mounting kit (accessories) for this type of attachment

2.5 Network And Power Connection, Additional Cables

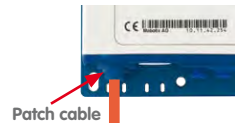
2.5.1 Network Cabling For S14 With Patch Cables

Using a patch cable and an MX-Patch-Box or MX-NPA-Box offers the following advantages:

- Quick installation/deinstallation
- No shortening of the cable in the event of multiple installation/removal
- Hose-proof/dust-proof connection in accordance with IP65

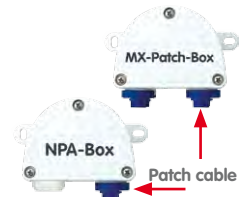
Connecting The Patch Cable To The Camera

First remove the blue bayonet catch and the blue sealing plug in the left-hand connector on the S14. Then insert the MOBOTIX patch cable into the camera and secure the cable using the bayonet catch.



Connecting The Patch Cable To An MX-Patch-Box, MX-NPA-Box or Standard Network Port

First remove the blue bayonet catch and the blue sealing plug in the right-hand connector on the box to establish the network connection to an MX-Patch-Box or MX-NPA-Box. Then insert the MOBOTIX patch cable into the box and secure the cable using the bayonet catch.



More information on installing an **MX-Patch-Box** or **MX-NPA-Box** is available at www.mobotix.com under **Products > Accessories > Functional Boxes**.

Insert the MOBOTIX patch cable of the S14 into the network port for standard connections (only permitted in indoor areas).

If additional cables are required inside the housing (MxBus, microphone, speaker), they must be connected as described in *Section 2.5.3, «Connecting Additional Cables»*.

2.5.2 Network Cabling For S14 With Patch Cables

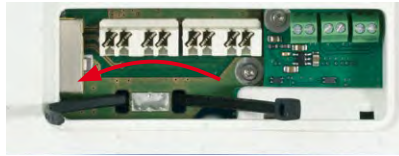
1. **Remove housing cover and cable plugs:**

Loosen the Allen screw on the housing cover of the S14 and remove it. Push the cable plug in the camera out of the housing from the inside to the outside (red arrow).



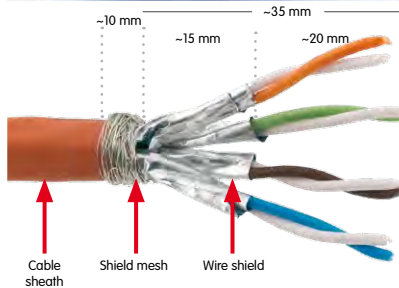
2. **Attach the cable ties:**

Feed one of the cable ties supplied through both slots in the circuit board underneath the LSA cutting clamp.



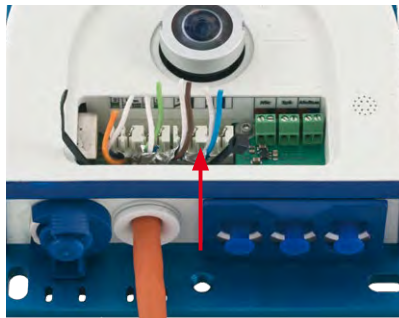
3. **Prepare the installation cable:**

Cut the installation cable to length, feed through the white single wire plug (5-7 mm/0.2 to 0.28 in), remove 35 mm/1.38 in of insulation and separate into individual twisted wire pairs including 15 mm/0.6 in sheathing. Wind the shield mesh around the sheath to a width of 10 mm/0.4 in so that it can be fixed on the contact surface later using the cable tie.



4. **Secure the cable:**

Push the plug out and insert the installation cable with single wire plug (5-7 mm/0.2 to 0.28 in) into the opening intended for the installation cable. The rubber sleeve must sit tightly on the installation cable to prevent the penetration of moisture. Tighten the cable tie around the shield mesh to ensure less tension.



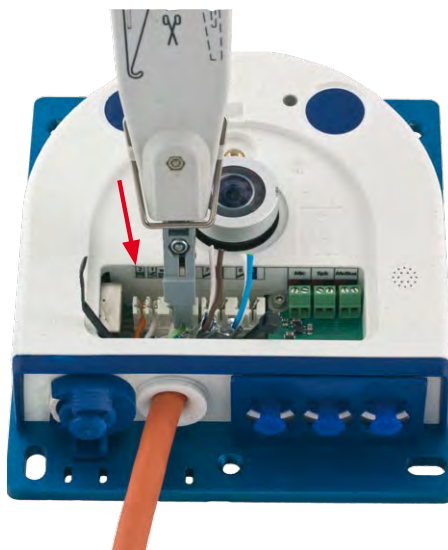
Ensure that the installation cable is fed right into the housing when the camera is in the right position so that the cable plug provides optimal sealing for the housing

5. **Connecting the cable wires:** The individual wires of the installation cable can be connected to the LSA cutting clamp using an appropriate tool and in accordance with the EIA/TIA-568A or B standard used (see printed color coding above the clamp; see red arrow in the illustration below).

Caution

Make sure that **all cable end offcuts are removed from inside the camera**. If not, this could lead to **short circuits!**

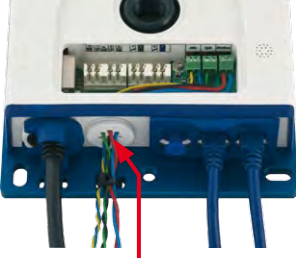
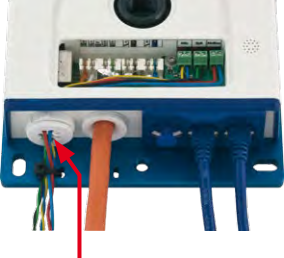
Hint: Hold the cable ends firm before cutting them with the LSA+ tool.



If additional cables are required inside the housing (MxBus, microphone, speaker), they must be connected as described in *Section 2.5.3, «Connecting Additional Cables»*.

2.5.3 Connecting Additional Cables

Additional cables can be fed through the free opening in the housing, depending on the Ethernet connector used (patch cable or installation cable). If an installation cable is used, additional cables should be installed after the installation cable has been fitted.

Ethernet via patch cable	Ethernet via installation cable
 Additional cables (MxBus, microphone, speaker) 1. Replace any single wire plugs with appropriate cable plugs (M.4/5) for additional cables. 	 Additional cables (MxBus, microphone, speaker) 1. Remove the bayonet catch and the patch cable and push the single wire plug or appropriate cable plug (M.4/5) in so that the edges protrude inside. The bayonet catch will no longer be used.

2. Push the single wire plug with the individual wires through or push the cable with sheathing through the cable plug.
3. Connect the wires to the corresponding screw terminals with the help of the screwdriver supplied.
4. Fix single wires or cables to the base plate using one of the cable ties supplied.
5. Connect wires to the corresponding devices (MxBus module, microphone, speaker).



2.5.4 PoE Variables

The power consumption of the camera depends on the functions in use as well as any peripheral devices connected (see table). PoE classes 1, 2 or 3 may be selected in the browser-based user interface in order to optimally adjust the camera to your system design (PoE switch in use, emergency power concept, etc.).

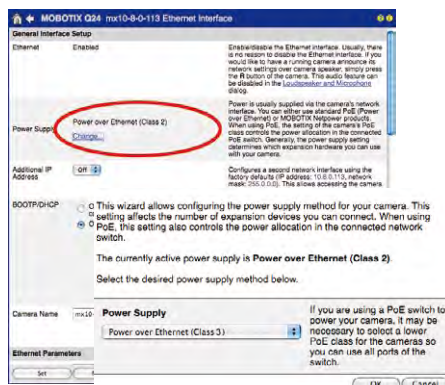
PoE Power Level Classes (IEEE 802.3af standard)		
Class	Max. power consumption	Camera operating mode and peripheral devices
1	0.44 W–3.84 W	Low power mode (available soon); no peripheral devices
2	3.84 W–6.49 W (factory default)	Normal mode; max. 1 W for peripheral devices
3	6.49 W–12.95 W	Full power mode; max. 4 W for peripheral devices (e.g. MX-GPS-Box on MxBus)

MOBOTIX factory default is class 2

PoE Variables:
Multiple cameras
can be operated
simultaneously from
the same switch

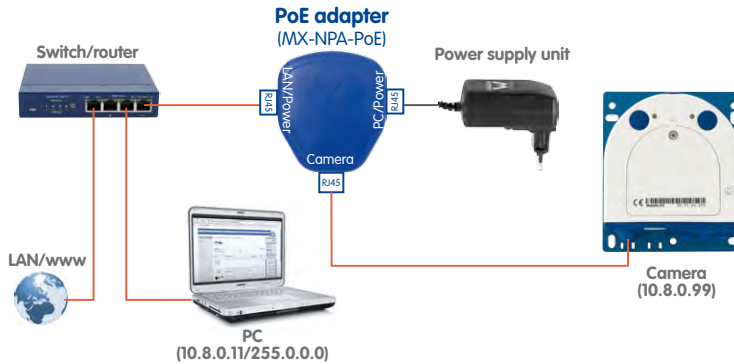
The MOBOTIX factory default is PoE class 2. This default setting is usually fine, and nothing needs to be changed. However, the PoE power class must be changed in the browser if the higher power class 3 is required for your application:

1. **Select Admin Menu > Network Setup > Ethernet Interface** (for experts).
2. Click on **Change** under **Power Supply**.
3. A **Power Wizard** will appear to guide you through the PoE configuration steps.
4. Next, restart the camera: Disconnect the camera from the power supply. Then reconnect it, for example, by disconnecting and then reconnecting the Ethernet cable at the PoE switch.



2.5.5 Power Supply Using A Switch

1. Connect the factory pre-installed cable of the camera to the **Camera** connector of the PoE adapter.
2. Connect the **LAN/Power** connector of the PoE adapter to the Ethernet connector of the switch/router or the Ethernet port.
3. Plug the RJ45 connector of the power supply unit into the **PC/Power** connector of the PoE adapter.



The IP addresses in the diagram are shown only as an example

For the S14 you should use the blue MX-NPA-PoE-Set or the MX-NPA-Box - previous MOBOTIX network power accessories, such as the NPA-Set, Power-Box and Power-Rack (MX-NPA-Set, MX-NPR-4 and MX-NPR8/20) are not suitable for use with the S14



The IP addresses in the diagram are shown only as an example

The PoE adapter replaces the crossover cable when directly connecting to a computer

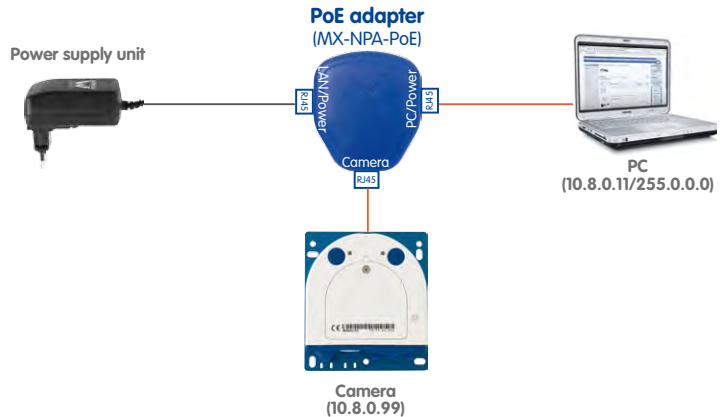
For the S14 you should use the blue MX-NPA-PoE-Set or the MX-NPA-Box – previous MOBOTIX network power accessories, such as the NPA-Set, Power-Box and Power-Rack (MX-NPA-Set, MX-NPR-4 and MX-NPR8/20) are not suitable for use with the S14



The IP addresses in the diagram are shown only as an example

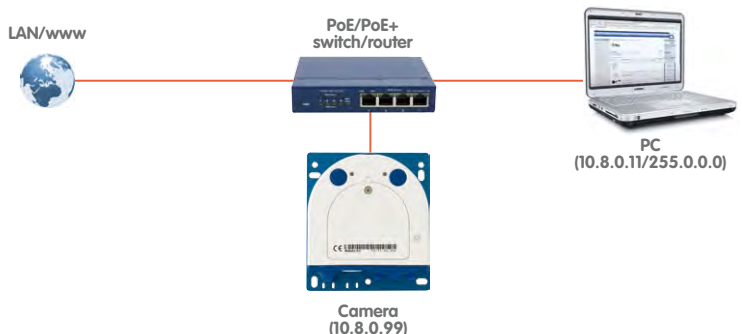
2.5.6 Power Supply When Connected Directly To A Computer

1. Connect the factory pre-installed cable of the camera to the **Camera** connector of the PoE adapter.
2. Connect the **PC/Power** connector of the PoE adapter to the Ethernet port of the computer.
3. Plug the RJ45 connector of the power supply unit into the **LAN/Power** connector of the PoE adapter.



2.5.7 Power Supply With Power-Over-Ethernet Products

Connect the factory pre-installed cable of the camera to the Ethernet connector of the PoE switch/router. The switch/router must support the PoE standards IEEE 802.3af or IEEE 802.3at.



2.5.8 Camera Startup Sequence

As soon as the power supply has been established, LEDs 1 and 2 will show the progress of the startup sequence.



LED defaults:

- 1 Power (on), Error (flashes)
- 2 Recording (flashes)

- **Booting:** Immediately after connecting the power supply, the red LED lights up, blinks for two seconds, then stays on permanently red. A camera self-test is carried out at this point, and the entire system is started. In case of an error, the camera will start using the backup operating system.
- **Waiting for key pressed:** Both LEDs light up for four seconds. If you press the **R or L key of the camera** during this time, the camera will execute the corresponding function (see Section 3.2.6, «Starting The Camera With The Factory IP Address» and Section 3.2.7, «Starting The Camera With An Automatic IP Address (DHCP)»).
- **Ready:** Once the camera software has been started, the green LED is on permanently and the red LED blinks. The camera can now be accessed via the network (browser, MxControlCenter, MxEasy, etc.).

1. Start



2. Key



3. Ready



Note

During the startup sequence of the camera, the LEDs will always light up, even if they have been deactivated in **Admin Menu > LED Setup**.

Download the free-of-charge MxEasy and MxControlCenter software at www.mobotix.com

Camera software
in the browser

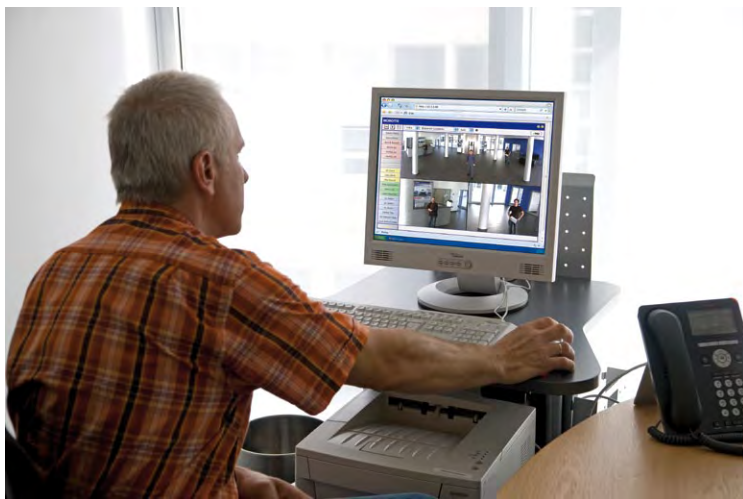
3 OPERATING THE CAMERA

3.1 Manual and Automatic Operation – Overview

MOBOTIX cameras do not require any extra software. Thus, you can set up and operate the MOBOTIX camera using a JavaScript-enabled browser on all common operating systems (such as Windows, Linux, Macintosh, etc.). As an alternative, you can also use the MOBOTIX applications MxControlCenter and MxEasy. Follow these steps to set up the camera:

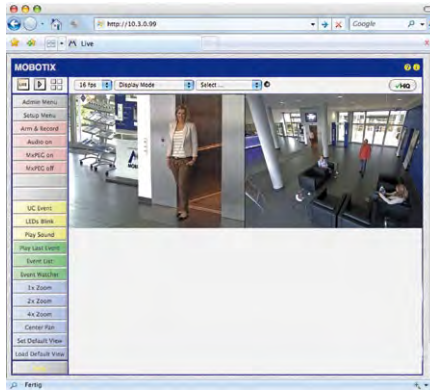
1. **Connect the camera to the network.** Power is supplied directly via the Ethernet cable (see Chapter 2, «Installation»)
2. **Set up the camera's network parameters:**
 - **Manually via a web browser** (see Section 3.2.1, «Manually Setting Up The Network Parameters In A Browser» and below)
 - **Automatically with MxControlCenter/MxEasy** (see Section 3.2.3 and Section 3.2.4) or **via DHCP** (see Section 3.2.7, «Starting The Camera With An Automatic IP Address (DHCP)»)
3. **Configure the camera** using the web-based user interface, MxControlCenter or MxEasy.

Every MOBOTIX camera comes preconfigured with a static IP address in the 10.x.x.x range (for example, 10 . 8 . 0 . 99). However, local computer networks usually have IP addresses in the 172 or 192 ranges. In order to access a MOBOTIX camera via the network, the camera needs to obtain an IP address in the same address range. You can **set up the network parameters of the MOBOTIX camera using one of the following methods: Manually, using MxCC and MxEasy or by DHCP.**



3.1.1 Manually Using A Computer In The 10.x.x.x IP Address Range

You can set up the camera's network parameters using a browser and the embedded camera software. To do this, connect the camera to a computer or a network that is using a 10.x.x.x IP address range (see Section 3.2.1, «*Manually Setting Up The Network Parameters In A Browser*»). Once this has been completed, you can enter the camera's default IP address in the browser's address bar of the computer (see Section 3.2.2, «*First Images And The Most Important Settings In The Browser*»). Next, click on the **Admin Menu** button to open the camera's Quick Installation in the browser's user interface. This is where you can configure the desired network parameters of the camera. Once you have completed the Quick Installation, you can connect the camera with its new network parameters to the desired network.



The default IP address of your camera is printed on a sticker on the front

Advantages

- The camera does not need to be physically accessible, that is, it may already be mounted.
- No additional software is required.
- The network parameters can be set flexibly through manual entry.

Disadvantages

- The computer or the network needs to operate in the 10.x.x.x IP address range or need to be able to access such a network.
- The setup does not work automatically.
- You need to know the relevant network parameters.

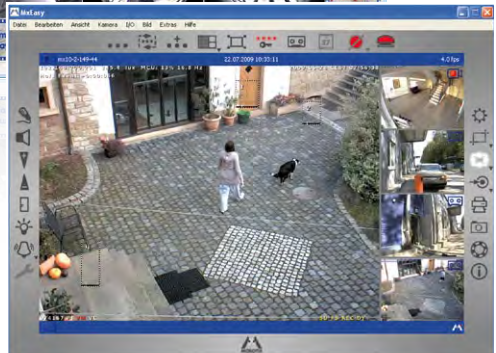
3.1.2 Automatically Using MxControlCenter Or MxEasy

You can set up the camera's network parameters using the free-of-charge video management software MxControlCenter or MxEasy (see *Section 3.2.3* and *Section 3.2.4*). You can also use one of these applications to automatically configure the network parameters of MOBOTIX cameras that are not operating on the same IP address range as the computer.

MxControlCenter
software (free download
from www.mobotix.com)



MxEasy
(free download from
www.mobotix.com)



Advantages

- You can connect the camera directly to the target network.
- The camera does not need to be physically accessible, that is, it may already be mounted.
- The camera can be configured to automatically receive an IP address (optional).
- The network parameters can be manually set (optional).
- You do not need to access the camera software.

Requirement

- Either MxControlCenter or MxEasy must be installed on the computer.

3.1.3 Automatically Using DHCP

The camera can automatically obtain its network parameters using DHCP (Dynamic Host Configuration Protocol). This requires the network to have a functioning DHCP server (for example, a DSL router with activated DHCP server) and the camera must be booted using DHCP (see Section 3.2.7, «Starting The Camera With An Automatic IP Address (DHCP)»). The IP address automatically assigned by the DHCP server will be announced via the camera speaker as soon as the camera has booted successfully.

Advantages

- You can connect the camera directly to the target network.
- Network parameters are automatically assigned.
- No additional software is required.
- You do not need to access the camera software.

Disadvantages

- The camera needs to be physically accessible as you need to press a key on the camera housing to boot it using DHCP.
- Requires a running DHCP server on the network.



3.2 First Images And The Most Important Settings

Once the MOBOTIX camera has been connected to the network, you need to set up the camera's network interface accordingly. This step involves setting up and checking the network parameters of the camera. If your network is already using an IP address in the 10.x.x.x range with a 255.0.0.0 network mask, you do not need to change the camera's network parameters. You can access the camera directly (see [Section 3.2.2](#)). If your network or computer does not use an IP address in the 10.x.x.x range (for example, in the 192 or 172 ranges), you should follow one of the following methods for changing the camera's network parameters:

- **Manual Setup** (see [Section 3.2.1](#))
- **Automatic setup using MxControlCenter or MxEasy** (see [Section 3.2.3](#) and [Section 3.2.4](#))

Pressing the "L" key (see [Section 2.5.8](#)) will prompt the camera to announce its current IP address on the camera speaker

Note

We will use a camera with the factory address 10.8.0.99 in the following examples. Replace this IP address with the IP address of your camera. You will find the IP address of your camera on a small sticker on the camera. Make sure that the IP addresses used in the following examples are not already being used by other devices in the network.

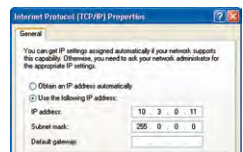
3.2.1 Manually Setting Up The Network Parameters In A Browser

You need a computer that is using a 10.x.x.x IP address in order to manually set up the network parameters of the MOBOTIX camera. The computer's network parameters usually have to be changed for this purpose.

1. Change the network parameters of your computer:

Windows (XP, Vista and 7):

1. Open **Start > Settings > Control Panel > Network Connections**. Clicking on **Properties** opens the dialog box shown.
2. Double-click on **Internet Protocol (TCP/IP)**. On the **General** tab, activate the **Use the following IP address** option. Enter an IP address in the 10.x.x.x range in this field (for example, 10.8.0.11).
3. Once all dialog boxes have been closed, the computer will have the IP address 10.8.0.11.



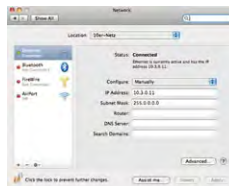
Entry in "Subnet mask" field: 255.0.0.0

Linux/Unix:

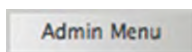
1. Open a terminal as **root** user.
2. Enter the following command: **ifconfig eth0:1 10.8.0.11**
3. The computer is now also using the IP address **10.8.0.11**

Mac OS X:

1. Open **System Properties > Network**.
2. Select **Ethernet**. In the **Configuration** field, select **Manual** and enter a 10.x.x.x IP address (for example, 10.8.0.11).
3. Click on **Apply** on the bottom right-hand side of the dialog box to assign the computer the IP address 10.8.0.11.

**2. Set Up The Target Network Parameters Of The MOBOTIX Camera:**

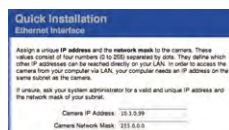
1. Open a web browser on the computer and enter the default IP address of the MOBOTIX camera in the address bar of the browser (for example, 10.8.0.99). Pressing Enter displays the user interface of the MOBOTIX camera (see also *Section 3.2.2, «First Images And The Most Important Settings In The Browser»*).
2. Click on the **Admin Menu** softbutton in the user interface of the MOBOTIX camera. The Quick Installation starts automatically once the **admin** user has logged on.



Note: The Quick Installation can also be executed at a later stage by opening **Admin Menu > Network Setup > Quick Installation** (see also *Quick Installation* in the *Camera Software Manual Part 2*).

3. Enter the target network parameters of the camera on the appropriate page of the Quick Installation assistant.

Note: The network parameters can also be modified retrospectively via **Admin Menu > Network Configuration > Quick Installation**.



4. Once you have completed the Quick Installation and rebooted the camera, the new network parameters will be activated. The camera can now be connected to the target network and, if required, further configured.

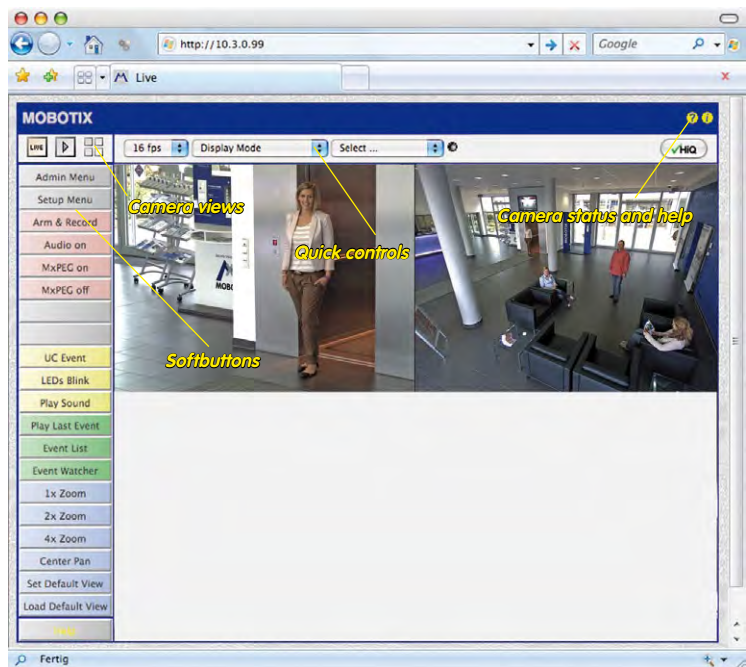
Default user data

User name: **admin**
password: **meinsm**

3.2.2 First Images And The Most Important Settings In The Browser

Once the MOBOTIX camera has been connected to the power supply and to the network, you can access the user interface with the live camera image in the web browser. Internet Explorer, Firefox, Safari or any other graphical browser with activated JavaScript is suitable. It does not matter which operating system is used.

After entering the camera's IP address in the browser's address bar, you will see the live view of the MOBOTIX camera with its user interface controls, such as softbuttons, buttons for the different camera screens, pull-down menus (Quick Controls), icons for accessing the online help and the camera status, and status information elements.



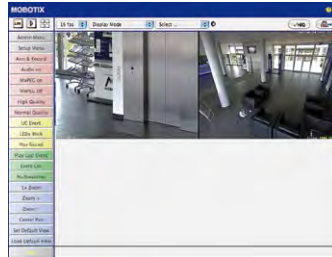
Note

Default access data for the administration menu

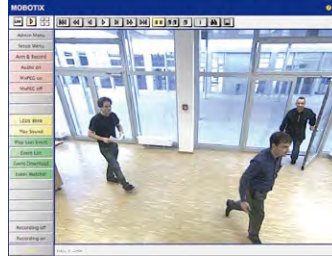
- User name: **admin**
- Password: **meinsm**

Camera Views: Live, Player, MultiView

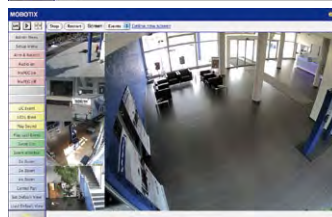
The MOBOTIX camera automatically displays the **live** screen when it starts up (factory default setting). You can set a different start page in **Admin Menu > Language and Start Page** (for example, the **Guest** screen) to allow a restricted access to the live image.



The other available standard screens include **Player** (playback of recorded images and video sequences) and the **MultiView** screen (displays several cameras with live or recorded images).



MultiView allows you to view several cameras via a "proxy" camera (especially useful if you want to access your cameras from outside of the network with reduced bandwidth) and the **PDA** mode provides a special screen for mobile devices.



Note

For more information on camera screens, see the section "Camera Screens In The Browser" in the *Camera Software Manual Part 2* or the online help of the camera's user interface.



Live view:
<http://<camera IP>/control/userimage.html>



Player screen:
<http://<camera IP>/control/player>



MultiView screen:
<http://<camera IP>/control/multiview>

PDA screen:
<http://<camera IP>/pda>

PDA event list:
<http://<camera IP>/control/player?eventlist&pda>

Guest screen:
<http://<camera IP>/cgi-bin/guestimage.html>

Download
MxControlCenter
for free from
www.mobotix.com

3.2.3 First Images And Network Parameter Configuration In MxControlCenter



Installation

Download the setup file from the MOBOTIX website to install the latest version. The latest versions are available at www.mobotix.com in the **Support > Software Downloads > MxControlCenter** section.

To install MxControlCenter, simply double-click on the setup file and follow the instructions.

The selected files are copied to the computer (older versions will be removed automatically) and the designated shortcuts are created during the installation process (Desktop, Start Menu, etc.).

Caution

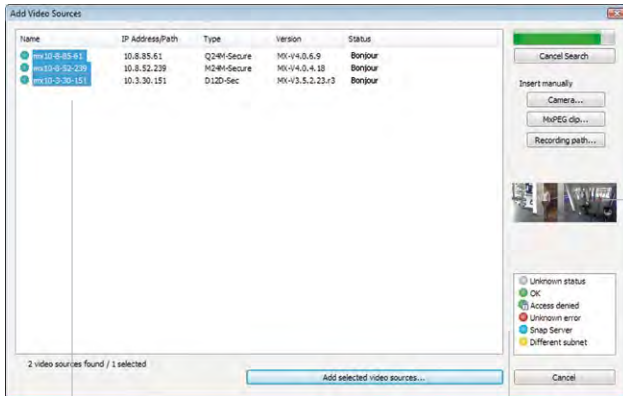
MxControlCenter will automatically attempt to find all MOBOTIX cameras in the physically-connected network (that is, even a MOBOTIX camera with a factory IP address of 10 . x . x . x). Make sure that the **firewall settings** on your computer are low enough so that MxControlCenter is not blocked. If any MOBOTIX cameras are found, MxControlCenter can **automatically reconfigure** them so that they are available in the current subnet of the computer. If you do not have permission to modify these settings on your computer, contact your system administrator for assistance.

MOBOTIX– Searching And Displaying MOBOTIX Cameras

Launch MxControlCenter after successful installation by double-clicking on the shortcut that was created during installation or the executable file **MxCC . exe** in the installation directory on your computer.

The **Add Video Sources** dialog box appears and the application automatically searches for MOBOTIX cameras in the local network when you launch the program for the first time. Select **Video Source > Add** from the menu to perform a camera search at a later time.

If your MOBOTIX camera is properly connected, it should appear together with the existing video sources in the following list:



List of video sources

Legend

Camera preview

Automated Search For
MOBOTIX Cameras

Note

Video sources in this context not only refer to MOBOTIX cameras, but also to third-party IP cameras, file server paths, MxPEG clips and analog cameras connected via MxServer (for example, analog dome cameras). These video sources are not found automatically and need to be added manually.

Cameras Are Found But Are Located In A Different Subnet

The symbols in the first column and the legend in the dialog box indicate whether you can access a particular camera directly from the MxControlCenter, which is the case for all cameras designated with  (**OK**). Cameras designated with  (**different subnet**) are located in a different subnet. This usually applies to new cameras or cameras that have been reset to their factory settings.

Note

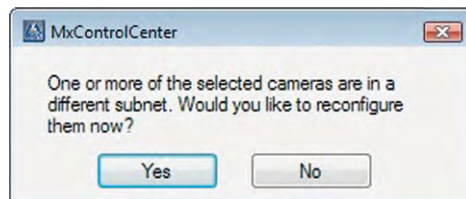
MxControlCenter finds all MOBOTIX cameras, even when the computer and the cameras are not located in the same subnet.

Once you have marked all of the desired video sources in the list with **OK**, you can now select the ones that you wish to display and manage in MxControlCenter. The live image is automatically displayed in the preview window when a camera is selected to help you identify the cameras.

For cameras marked with **Different subnet** or if you want to add additional video sources, follow the instructions in the following sections. You can also display the selected cameras directly in a layout. For more information, see «*Creating A New Layout*» further down.

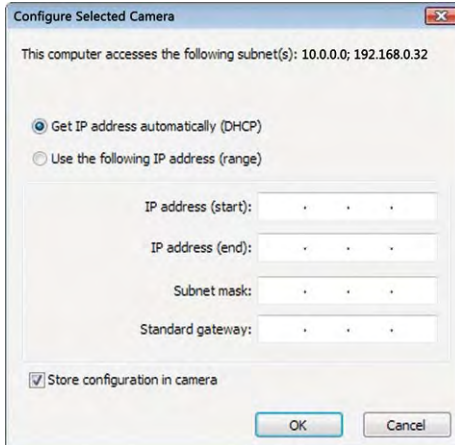
Reconfiguring Cameras In A Different Subnet

If one or more MOBOTIX cameras are displayed with the status **Different subnet** (for example, cameras with a factory IP address), MxControlCenter automatically offers to configure the network settings of these cameras. In this case, the application displays the dialog box shown here after you have clicked on the **Add selected video sources** button. Click on **Yes** to configure the cameras to the subnet of the computer.



A DHCP server automatically assigns IP addresses for network devices in most networks so that you can automatically select the default setting **Get IP address automatically (DHCP)** in the **Configure Selected Cameras** dialog box.

Activate the **Use this IP address/this range** option if the IP address of a particular camera must be assigned manually (for networks with static IP addresses). Obtain the assigned IP address, subnet mask and standard gateway from your network administrator and enter the data. All you have to do is enter the range of IP addresses that includes the addresses of all of these cameras to reconfigure multiple cameras at the same time.



Make sure that the **Store configuration in the camera** checkbox is selected. This setting ensures that the cameras are displayed with the correct network settings even after they have been rebooted. Click on **OK** to close the dialog box.

Wait until MxControlCenter has changed the network settings and rebooted the cameras. The status of the reconfigured camera changes from  (**Different subnet**) to  (**OK**).

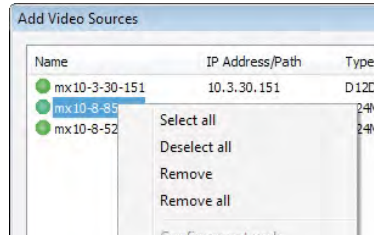
Defining Additional Video Sources

In addition to the MOBOTIX cameras that are found automatically, you can also manually add video sources to the list of video sources for MxControlCenter.

- **Camera:** Here, you can enter the known IP address or DNS name of a MOBOTIX camera or a third-party IP camera if it was not found by the automatic search feature.
- **MxPEG clip:** Adds an MxPEG video clip previously recorded by a MOBOTIX camera as a video source.
- **Recording path:** Adds the path of an external file server where a MOBOTIX camera has recorded audio/video data. The videos or images recorded at that location can now be played back using the **Player** or **Video Search**.

Editing The Video Source List

Right-click on this list to open a shortcut menu from which you can select all video sources or cancel the selection. You can also use this method to remove from the list some or all of the video sources that you would not like to display or manage in MxControlCenter.

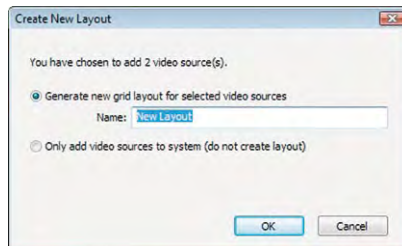


If you have cancelled the camera configuration process or need a password that differs from the camera's factory default password, you can also configure the camera from the shortcut menu at a later date and enter the user name and password required for reconfiguration at that time.

It is also possible to open the **Configure selected cameras** dialog box using the shortcut menu in order to change the camera network parameters.

Creating A New Layout

Select the camera or other video sources that you would like to display in a layout (a view with a group of selected cameras) in the **Add video sources** dialog box and then click on **Add selected video sources**.



The **Create new layout** dialog box is displayed. If you select the **Generate new grid for selected video sources** option here, MxControlCenter automatically generates a grid layout that displays windows of the same size for all selected video sources. Give each layout a unique name (for example, underground garage).

If you select the second option, the video sources you selected are simply integrated in the MxCC system where you can use them to generate a layout at a later time.

Click on **OK** to confirm.

3.2.4 First Images And Network Parameter Configuration In MxEasy

Installing And Starting MxEasy

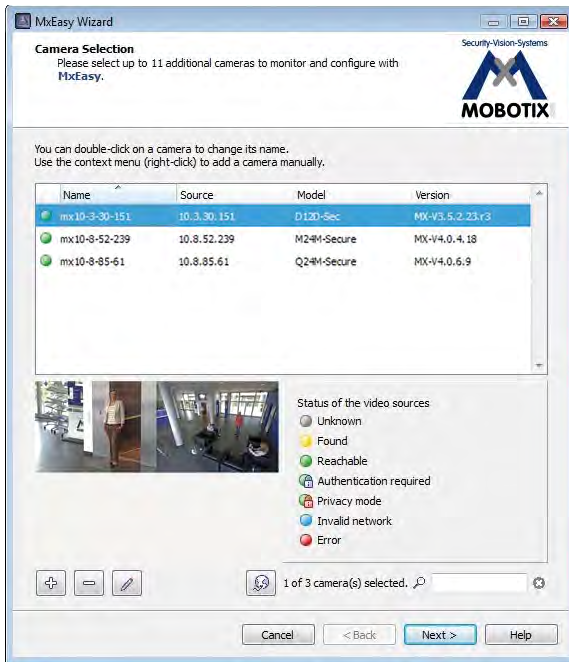
Download the current version of MxEasy from the MOBOTIX website (www.mobotix.com > **Support** > **Software Downloads in the MxEasy area**). Double-click on the shortcut for the program or load the program file.



Free MxEasy download
@ www.mobotix.com

Finding Cameras

When you start MxEasy for the first time on a computer, the MxEasy Assistant automatically begins to search for MOBOTIX cameras and displays all cameras found in a list. The camera list will be updated automatically as soon as new MOBOTIX cameras are connected to, or removed from the network.



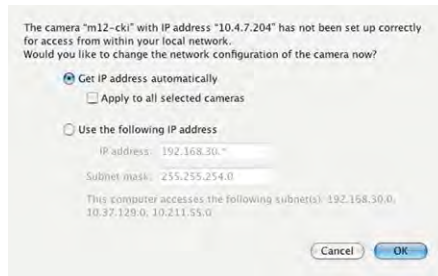
MxEasy also automatically monitors and displays the operating status of all cameras. Cameras that are not on the same subnet as the computer will get a differently colored symbol than the cameras that are on the same subnet. Likewise, the cameras that have an unknown password or for which no user name/password combination has been specified in MxEasy will be displayed in a different color. The following section *“Reconfiguring Network Addresses Of Cameras”* contains information about cameras with the status **Invalid network** (for example, all new MOBOTIX cameras with factory settings).

*Bonjour: automatic recognition of network services in IP networks

Reconfiguring Network Addresses Of Cameras

Using Bonjour*, MxEasy finds not only cameras on the same network as your computer, but also MOBOTIX cameras located in other subnets (the **Invalid Network** status). In such a case, you would not be able to establish any connection to cameras in a different network or subnet (without going into much further detail regarding TCP/IP network configurations). This is possible, for example, when a camera with a factory IP address is connected to a network in which a DHCP server automatically assigns the IP addresses. MxEasy can automatically configure such a camera so that it is "integrated" into your existing network. To do so, you only have to select the affected camera in the list and then click on **Continue**.

After a security prompt, a new dialog box for configuring the selected camera is displayed.



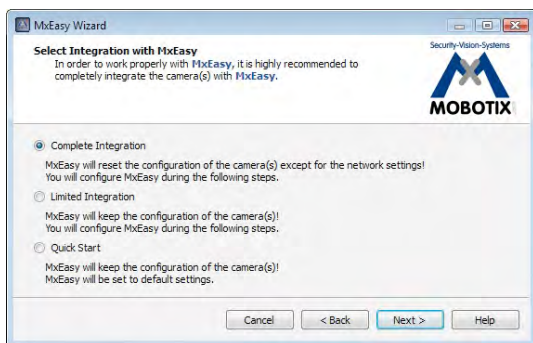
If your computer automatically obtains its IP address from a DHCP server, then this is certainly the best choice for that specific camera and most likely for all other cameras that have been found in a different subnet (**Get IP address automatically** option).

If you have assigned a static IP address to your computer, you will probably want to assign static IP addresses (issued by your system administrator) to every camera (the **Use this IP address** option). Normally, you enter the same configuration used for the network settings of your computer.

When you click on **OK**, the selected cameras are automatically reconfigured and they are located in the same subnet as the computer.

3.2.5 Integrating And Displaying Cameras

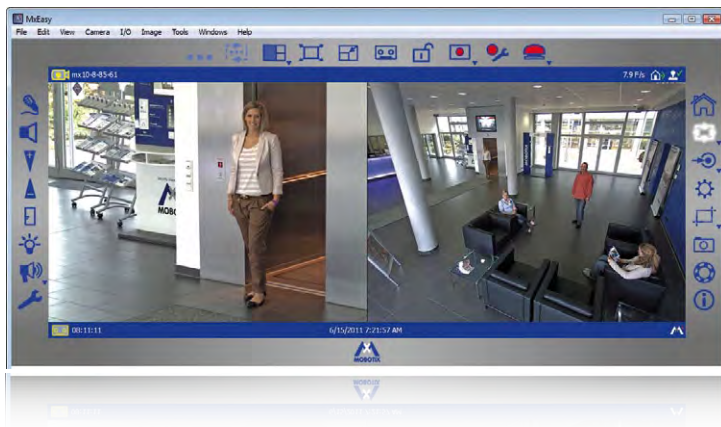
After a camera has been reconfigured, it has the status **Accessible** and can be integrated into MxEasy. The MxEasy Assistant then displays the **Define Integration Mode in MxEasy** dialog box.



Here, you can jump directly to the main window of MxEasy with the current live camera image by activating the option **Quick Start**. However, some required detailed configurations may have to be made at a later time (for example, password protection, available bandwidth). For this reason, we recommend activating the option **Complete integration** and complete the remaining dialog boxes of the MxEasy Assistant until the main window appears.

If one of the integrated cameras includes a **S14D**, the MxEasy Assistant opens an additional page where you can specify the **mounting positions** (*Ceiling, Wall, Floor*) and **display modes** (*Panorama, Surround, etc.*) of the individual sensor modules.

After you are done with the MxEasy Assistant, the application's main window appears and displays the first camera:



Main window with dual image display of a S14 (telephoto lens and wide angle)

For more information, see the **MxEasy User Manual**, which can be downloaded as a PDF file from the MOBOTIX website: www.mobotix.com > **Support** > **Manuals**.

Passwords and camera settings will not be changed

3.2.6 Starting The Camera With The Factory IP Address

Under certain circumstances, you may have to reset the camera to its factory IP address. This could be the case, for example, if the IP address has been lost or the camera does not respond to the last known IP address. Proceed as follows to start up the camera with its factory IP address:

1. If the camera is powered on, disconnect the power supply by unplugging the corresponding cables and then reconnect the power supply.
2. Wait until both LEDs light up simultaneously for the first time.
3. **Press the L key within the next four seconds and hold it down** (if you need to try again, go back to Step 1).



4. **Only release the L key** once the camera emits a single sound ("boing").

Notes

If you use the camera's **L key** to load the factory network configuration, this configuration is not automatically saved in the camera's flash memory. When the camera is next rebooted without using the **L key**, the last stored network configuration will be used. To permanently store the new network configuration in the camera's flash memory, open **Admin Menu > Store**.

As opposed to resetting the camera using **Admin Menu > Reset configuration to factory defaults**, the user information will **not** be reset if the camera is booted using the factory IP address.

Make sure you store the default network configuration to the permanent flash memory

3.2.7 Starting The Camera With An Automatic IP Address (DHCP)

If your network has a DHCP server, you can start the MOBOTIX camera with DHCP support. The camera automatically obtains an IP address from the DHCP server and announces the new network data. Please note that this announcement can only be heard if the camera is connected to an external speaker.

1. If the camera is powered on, disconnect the power supply by unplugging the corresponding cables and then reconnect the power supply.
2. Wait until both LEDs light up simultaneously for the first time.
3. **Press the R key within the next four seconds and hold it down** (if you need to try again, go back to Step 1).



4. **Only release the R key** once the camera emits a double sound ("boing boing").

Notes

Starting the camera with an automatic IP address (DHCP) is only **temporary**. The network configuration of the camera can be permanently set to DHCP under **Admin Menu > Ethernet Interface**.

Make sure that the network has a functioning DHCP server when starting the camera with DHCP support. If this is not the case, the camera cannot obtain a valid IP address and will use its last IP address.

You should also make sure that the cameras always obtain the same IP addresses by permanently assigning the MAC addresses of the cameras to the desired IP addresses.

*In case of an error,
the camera uses its
last IP address*

3.3 Virtual PTZ And Full Image Recording

3.3.1 Preparing The Virtual PTZ Function

The virtual PTZ function allows you to use a mouse or joystick to continuously zoom in on images from the selected video source and “virtually” move the enlarged image section within the entire image sensor area.



Greater ease of use
through a joystick



Operation Using The Mouse And Scroll Wheel

The vPTZ function of the S14 can be controlled in the browser using the mouse. This position becomes the new image center by clicking on any position on the image displayed on the monitor. The image moves accordingly and the image distortion is automatically corrected. The **scroll wheel** can be used to control the zoom function. This functionality is disabled in the default settings of the camera and must therefore first be activated. To do this, go to **Setup Menu > vPTZ Settings**, disable **Lock Mouse Wheel Zoom**, click on **Set** and then on **Close** to save your settings. You can now use the scroll wheel to zoom + (roll upwards) or zoom - (roll downwards).

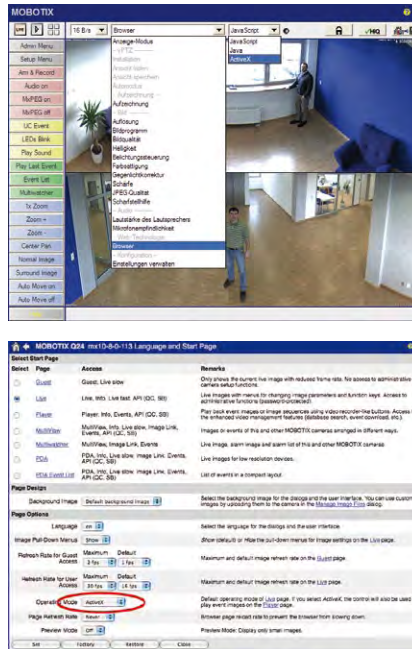
Virtual PTZ And Full Image Recording

Operation Using USB Joystick

A standard USB joystick can drastically improve vPTZ operation for the user – in the browser, in MxEasy, and in the MxControlCenter (however, MxCC is also equipped with a virtual joystick that can be operated using the mouse). Please first install the joystick on the PC according to the manufacturer's instructions.

In order to use a USB joystick in the browser, make sure that you have a PC with a Windows operating system and the latest version of Internet Explorer and that the **“ActiveX” mode in the camera software (browser) is activated:**

- Switch to **Browser** in the Quick Control.
- Under **Browser**, select the option **ActiveX** in the field to the right. The USB joystick can then be used until the browser is closed.
- To store the setting permanently, ActiveX must be activated in the **Admin Menu**. To do so, use **Language and Start Page** in the Admin Menu.
- Under the page options, select the **ActiveX** operating mode.
- Store the settings permanently in the camera by clicking on **Set** and **Close**.
- The joystick can now be used.



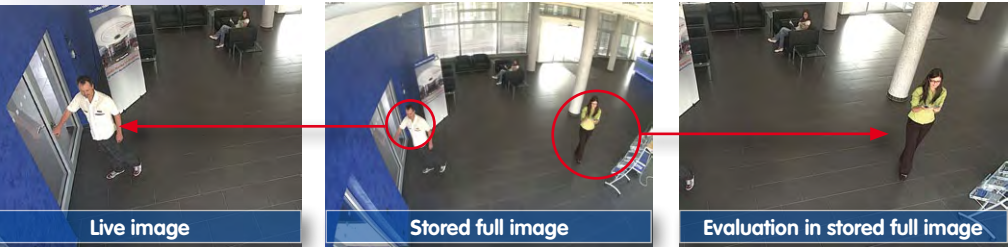
Notes

You will find more information and details on vPTZ in the **Camera Software Manual Part 2, Section 4.3.6, «Virtual PTZ»**, the **MxEasy manual, Section 2.4.1, «Activating the PTZ Features»**, the **MxControlCenter manual, Section 2.4.6, «Using the vPTZ Features»** and **Section 3.1.4, «The “PTZ Controls” Section In The Sidebar Panel»**.

Current versions of all manuals can be downloaded anytime from the MOBOTIX website www.mobotix.com under **Support > Manuals**.

3.3.2 Full Image Recording

It is possible to record a **full image**, regardless of the live image stream that is being displayed. This ensures that the recording always contains the full image of the lens used, even though the operator may have used the vPTZ features to zoom into the image in order to examine a specific detail.



Stored full image:
Original camera image
without distortion or
image correction

This means that you can use the vPTZ features in VGA resolution to pan, tilt and zoom in the live image while the camera is, for example, recording full images at 1 fps in MEGA or QXGA resolution.

In **MxEasy** or **MxControlCenter**, the recorded full images may be prepared for the user with the vPTZ functions (for example, panning and zooming in on an image detail such as a doorway).

If **full image recording is not activated**, only the last displayed live image will be saved (save what is seen). The **main benefit** of live image storage is to ensure that the full power of the camera processor is used for live image correction and maximum frame rates. The **main advantage of full image recording** lies in the special functionality of the D14D, in that it can always ensure the availability of a maximum size (full) image for later searches, despite vPTZ actions carried out on the live image. The mechanical limitations of motor-driven PTZ cameras mean that they simply **cannot** provide this unique advantage to the user!

Notes

Post-event search in the full image: If you are using Full Image Recording on D14D cameras, you should use at least MEGA resolution when storing. This will facilitate later searches in **MxControlCenter** or **MxEasy**. The advanced distortion correction features require this function to deliver satisfactory image quality.

Full image recording on: Due to the increased processing time, full image recording reduces the data rate of the live image stream, which may drop by around 10 to 30 percent. We therefore recommend reducing the frame rate for storage as much as possible to affect the live image stream as little as possible.

Full image recording off: The event that triggered a video motion (VideoMotion VM) window may not be in the recorded sequences while the window was not displayed at the time.

Virtual PTZ And Full Image Recording

Activate/Deactivate Full Image Recording In The Browser

To configure this feature, open the **Setup Menu > Event Control > Recording** dialog box and activate or deactivate the **Full Image Recording** option.

General Settings	Value	Explanation
Arming	Enable	Arm Recording: Controls camera recording: Enable: activate Recording; Off: deactivate Recording; SI: Recording armed by signal input. CS: Recording armed by custom signal as defined in General Event Settings . From Master: copies Recording arming state from master camera.
	(no time table)	Time Table Profile: Time table profile for time-controlled recording. (Time Tables)
Digital Signing	Off	Digital Signing: Digitally sign the recorded image files using the X.509 certificate of the web server. Manage X.509 certificates of the web server .
Recording Status Symbol	Off	Activate Recording Status Symbol: On will draw a symbol in the image to visualize the current arming and recording status.
Full Image Recording	On	Activate Full Image Recording: On will always record the Full Image of the sensor with the specified parameters. On will record the visible image.
Terminate Recording (TR)	Off	Activate Terminate Recording: Terminate recording if an event is detected. Use this option to freeze stored images. Click here to resume recording.
Storage Settings	Value	Explanation
Recording (REC)	Event Recording	Recording Mode: Type of event and story recording. Snap Shot Recording: stores single JPEG pictures. Event Recording: stores stream files for every event using MJPEG codec. Continuous Recording: continuously streams videodata to stream files using MJPEG codec.
	Include audio	Record Audio Data: Store audio data in stream file if available. Enable and configure microphone .
Start Recording	All	Start Recording: Select the events which will start recording. Use [Ctrl]-Click to select more than one event. Events in brackets need to be activated first. EG or EL for filtered events.

Buttons: Set, Factory, Restore, Close, Less

Attribute	Value	Explanation
Image Size	QXGA (2048x1536)	Image Size: Factory default: Mega (1280x960)
JPEG Quality	60% (High)	JPEG Quality: Factory default: 60%
Text Display	Date & time	Text Display: The Date & time option will only display date and time.
	Date & time	Date and Time: Select format of date and time.

Buttons: Set, Factory, Restore, Close

3.3.3 Special S14 Configuration In The Browser

The MOBOTIX S14M and S14D with one or two D11/N11 sensor modules offer a range of special configuration options for the image settings due to their hemispheric lenses. Depending on where the camera is mounted (ceiling, wall or floor) and on the live image display preferred by the user, certain important basic settings and, if necessary, their adjustment must be configured when a S14 is first installed.

A corresponding adjustment of the image setting is strongly recommended if one or both of the sensor modules of a S14D were mounted using a 15° wedge (available as an accessory).

S14D And Different Sensor Modules

A range of combination options are provided that change the available display modes and configuration possibilities by using the MOBOTIX S14D with different sensor modules.

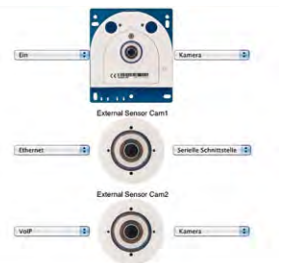


Because of this, a S14D automatically detects which sensor modules are installed and proceeds as follows:

- When the camera is started for the first time, it detects the connected sensor modules and captures their data (focal length, day or night version).
- If only one sensor module is connected, the camera acts as a mono camera (meaning that there is no automatic day/night switching, etc.).
- If there is no change within the first 12 hours of operation, the camera writes the details of these sensor modules to the camera configuration.
- With every restart, the camera checks if the stored sensor modules are present. If any changes are detected, **the camera indicates these through a corresponding alert in the live display.**

Configuring The LEDs On A S14D

Because the LEDs on a S14D are located not only on the camera but also on the sensor modules, they can be configured separately for the camera and each sensor module (**Admin Menu > LED Setup**).



Characteristics Of A S14M

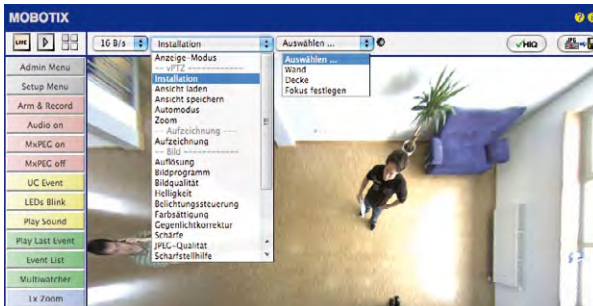
A S14M can only be fitted with an L11 lens due to design considerations. Because of this, a S14M acts the same as a **Q24M Hemispheric**. It allows the same types of installation (ceiling, wall, floor) and provides the same display modes.



Configuration Of The S14 Basic Parameters

Complete the steps described below in the browser window:

1. **Log onto the camera and boot it** as described in *Section 3.2*.
2. **Select mounting position wall/ceiling/floor:** Click on **Installation** in the Quick Control panel and then select **Wall**, **Ceiling** or **Floor** according to the mounting position of the camera. **Ceiling** always means that the orientation of the camera or sensor module is from **top to bottom** and for **Floor**, the camera or sensor module's orientation is from **bottom to top**.



When you are setting up a S14D with two sensor modules, specify their mounting positions separately in the **Installation (right)** and **Installation (left)** Quick Control fields for the right and left sensor modules (i.e., camera images) respectively.

As a result, you will get a **perspective-corrected panorama view** for each image sensor matching the specified mounting position. Panorama view is set as a factory default and it can be changed as described below.

3. Switch to the **Display Mode** Quick Control.
4. Set the mode that you want to be the standard view. For demonstration purposes, the descriptions below describe the typical display mode for the wall mount and the ceiling mount, **Panorama** and **Surround** respectively. Every other display mode can be operated in the same way.



Left and right camera images from two sensor modules (S14D)

Camera live image with
panorama correction

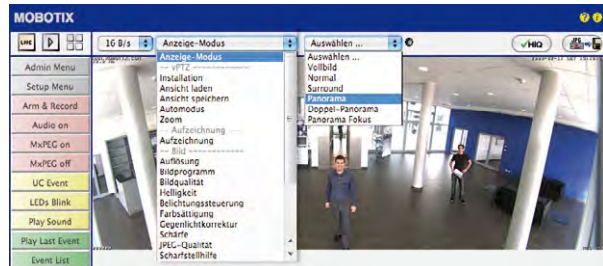
Wall-Mounted: Setting And Correcting the Standard View "Panorama"



High-resolution 180° panorama

1. In the **Display Mode** Quick Control, select the option **Panorama**. Examine the image that is now displayed. If the section meets your expectations, no further adjustment is necessary, and panorama configuration is complete. To change the image section to meet your specific expectations, continue with Step 2.

Camera live image
without MOBOTIX
panorama correction with
Quick Controls visible



Note

The currently visible image section may differ from the desired image section due to the installation position or any accessories in use, for example. However, it is not necessary to physically move the camera, as in this case the browser alone can be used to adjust the visible panorama image by zooming, panning and tilting. Tilted vertical lines may also be optically straightened to the image edges using the panorama correction function. These tilted lines are primarily caused if the camera or sensor module is tilted (for example, due to mounting with 15° wedges) or if the image tilt is modified.

- Click on the **lock icon**. Clicking on the lock once opens it (lock clasp is raised). The lock prevents execution of later vPTZ actions, which could also unintentionally modify the view you configure. This holds for all overview display modes, that is, also for Panorama/Focus, Double Panorama and Surround.



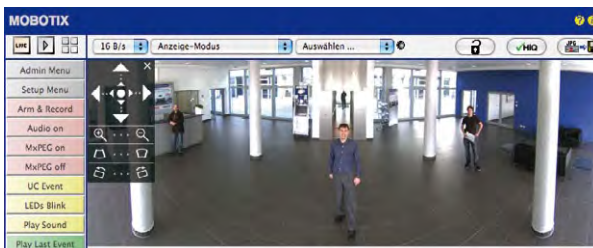
Lock open

- A new **icon for processing the panorama image** appears in the top left corner of the camera image. Enlarge the image by clicking on the icon once (OnScreen Control appears).



Click on the icon

- Using the **OnScreen Control** visible in the live camera image, you can now change the displayed live camera image as desired (panning, tilting, zooming, rotating and panorama correction; see fig. on the right). When doing so, the vPTZ function using the mouse or joystick is deactivated. In case of a S14D with two sensor modules, click on the corresponding camera image (right/left) to edit it (highlighted with a yellow frame).

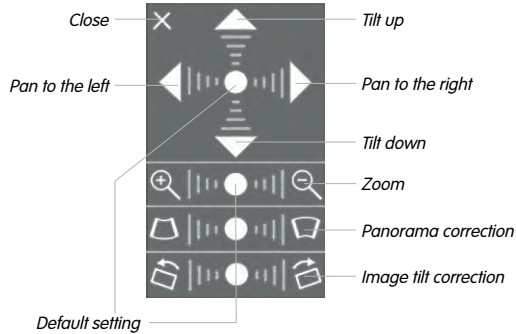


Camera live image with panorama correction with OnScreen Control visible

- After you have modified the desired setting, close the control panel (x in the top left hand corner).
- Click on the lock icon again** to close it (lock clasp is down). The panorama image setting is then locked until the camera is next restarted.

Caution

To permanently save the standard image setting defined for the S14M, go to the **Store Complete Configuration** option in the **Manage Settings** Quick Control. The settings will then remain in effect, even after rebooting.

Functions Of The S14's OnScreen Control

Depending on the mounting position (ceiling, wall, floor), panorama correction and mounting error correction may not be available!

To use the OnScreen Control, click on the arrows in the top area for shifting the image section. In the bottom areas, which are displayed when needed, click to the left and/or right of the center point.

The same applies for every area: **The further away that you click from an area's center point, the greater the change triggered.** To reset an area, click on its center point again.

During panorama correction, clicking between the two trapezoid symbols straightens the left or right tilting lines, which are best visible at the edges of the image section.



Bring columns together at the **top** (necessary to correct the example on the left)



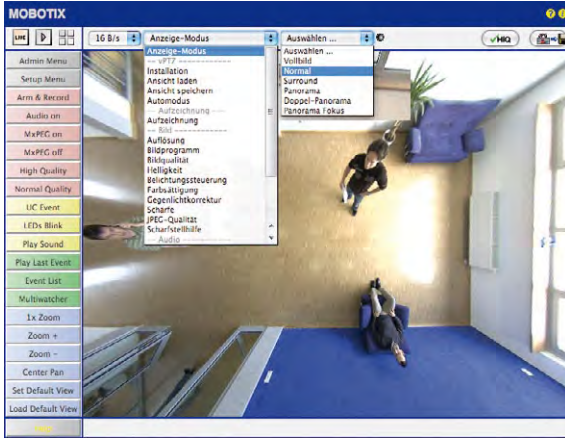
Bring columns together at the **bottom**



Ceiling-Mounted: Set North (User-Defined North Direction)

Once a sensor module (S14D) or entire camera (S14M) is mounted on a ceiling, you need to specify its North direction. This is not the “true” direction of North but rather the **main line of sight or the focus** of the camera or sensor module. It serves as a reference for the North direction in the **Surround** and **Double Panorama** display modes (the **Ceiling** option was already selected in the **Installation Type** Quick Control).

1. In the case of a double image, click on the corresponding sensor module (camera image) and select the **Normal** option from the **Display Mode** Quick Control.

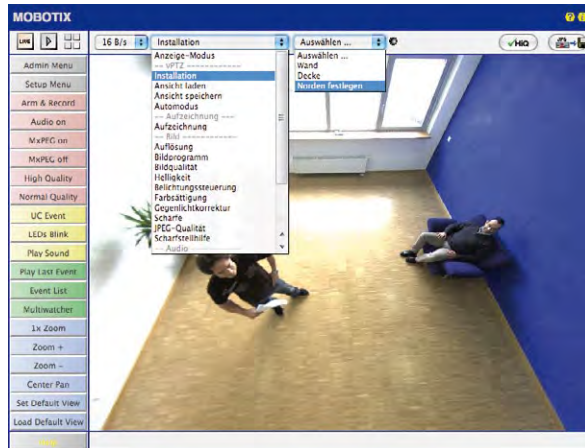


2. **Rotate the live image** in the desired direction using the mouse or a joystick connected to the computer.

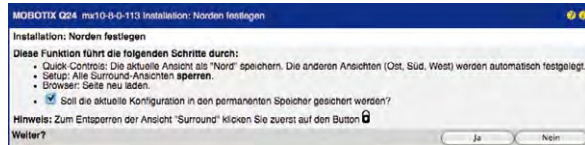


For vPTZ use and the configuration of a USB joystick, see Section 3.3.1

3. In the **Installation Quick Control**, select the **Set North** option.



4. Store the desired North direction permanently by first activating the checkbox and then clicking on **Yes**.



5. You have now set the North direction for the **Surround** and **Double Panorama** display modes. In the next step, you can set these views as the standard view for the camera live image.



Caution: No OnScreen Control is available in "Double Panorama" mode

In the **Display Mode** Quick Control, select the option **Surround or Double Panorama**. You can fine-tune the views using the vPTZ via mouse or joystick and, as described above, by unlocking and locking the standard view using the lock icon (open lock, correct display and close lock again).

Note

For each of the *subviews* (*North, East, etc.*; see below), the **OnScreen Control** on the side can be used to adapt it (open lock, click on subview, adapt view, click on next subview, adapt view and close lock again).

Camera Images And Subviews Of Camera Images

The S14D's ability to operate multiple sensor modules means that in double image display, the live image's **camera images** (left, right) can be used for differing display modes. Depending on the display mode selected for each camera image, this may be divided into **subviews**:

Four subviews, subview 1 highlighted (yellow frame)

Left camera image with three subviews
Panorama/Focus display mode
(for example, sensor module Cam1)

Right-side camera image with a partial view
Full Image display mode
(for example, sensor module Cam2)

When you click inside one of the subviews, this area is highlighted with a yellow frame. All of the PTZ actions triggered by the mouse, joystick or OnScreen Control now only apply to the highlighted subview.



Sensor Configuration (S14D Only)

Sensor configuration specifies which sensor module is connected to which of the camera's connections (**Cam1** or **Cam2**), and in which camera image (left/right) the sensor module is to appear for the dual image display. Open the corresponding dialog box here: **Admin Menu > Sensor Configuration**.



You should also open the **Sensor Configuration** dialog box in the following cases:

- **Swapping the displayed camera images:** You wish to display the left camera image on the right (and vice versa) without having to replug the sensor module cables on the camera itself.
- **Replacement of sensor modules:** In this case, the S14D detects after startup that the sensor modules have been replaced and indicates this through an alert superimposed on the live image as well as through a system message (**Admin Menu > System Messages**).
- **Adding/switching on sensor modules:** This is where you can re-enable deactivated modules.
- **Removing/switching off sensor modules:** This is where you can deactivate any connected modules if needed.



Configuration Of Audio Settings

Thanks to the MOBOTIX S14 system's flexible layout, there are a number of different microphone options depending on the model used (S14D, S14M):

The screenshot shows the 'MOBOTIX S14 mx10-11-2-82 Mikrofon und Lautsprecher' configuration window. It is divided into two main sections: 'Gerät' (Device) and 'Parameter'.

Gerät Section:

- Audio-Eingang (Audio Input):** Includes options for 'Deaktiviert' (selected), 'Microphone at Cam1', 'Microphone at Cam2', 'Microphone at Cam1 and Cam2', and 'External Microphone'. A 'Testen' button is present. An explanation states: 'Aktiviert bzw. deaktiviert Mikrofon und Lautsprecher für Aufnahmegeräte. Kann auch in deaktiviertem Zustand zum Auslösen von Ereignissen genutzt werden.' (Activates or deactivates microphone and speaker for recording devices. Can also be used in deactivated state to trigger events.)
- Audio-Ausgang (Audio Output):** Includes options for 'Deaktiviert' and 'External Speaker' (selected). A 'Testen' button is present. An explanation states: 'Stellen Sie die Lautstärke des Lautsprechers ein. Zum Test auswählen.' (Set the speaker volume. Select for testing.)
- Lautstärke (Volume):** A slider set to 0.
- Audio-Status:** A dropdown menu showing 'gering' (low).

Parameter Section:

- Netzwerkdaten anzeigen (Show network data):** A dropdown menu set to 'Aktiviert' (activated). Explanation: 'Aktiviert bzw. deaktiviert die Anzeige der aktuellen Net-MAC-Adresse (siehe Ethernet-Schnittstelle). Wenn die /-Anzeige der Netzwerkdaten auf die R-Taste der Kamera drücken.' (Activates or deactivates the display of the current network MAC address (see Ethernet interface). When the /-display of network data is pressed on the R-button of the camera.)
- Echo-Kompensation:** A dropdown menu set to 'Deaktiviert' (deactivated). Explanation: 'Aktiviert oder deaktiviert die Echo-Kompensation. Kann werden, um Echoeffekte beim Gegensprechen mit der e-ExtIO verfügbar.' (Activates or deactivates the echo compensation. Can be used to avoid echo effects when talking back with the e-ExtIO available.)

At the bottom, there are buttons for 'Setzen' (Set), 'Voreinstellung' (Default), 'Zurückholen' (Reset), and 'Schließen' (Close).

Information on how to connect external microphones and speakers is provided in [Section 2.2.8, «External Audio Support \(Microphone/Speaker\)»](#).

Microphones for the S14D:

With this camera, you can either use an external microphone or the connected sensor modules' built-in microphones (or just one of these). If the microphones of both sensor modules are used, the camera records the sound of both microphones to a single audio track.

Microphone for the S14M:

You have to use an external microphone with this camera.

Speaker (S14D, S14M):

As neither the S14D nor the S14M features a built-in speaker, this function can only be used to activate/deactivate an externally-connected speaker.

Flash memory devices:
more reliable than
hard drives

3.4 MicroSD Card Recording

3.4.1 Introduction

Flash-based storage devices (MicroSD cards, USB sticks and solid-state drives) do not contain any moving parts as compared to the commonly used hard drives. Flash-based storage devices are compact and highly resistant to moisture and vibrations. They feature low energy consumption and they do not lose any data in the event of a power failure, meaning that they are ideal for use with MOBOTIX cameras.



Number Of Write/Delete Cycles Per Flash Storage Cell

The number of write/delete cycles of every storage cell of a flash device is limited. The controller of the flash device automatically detects individual flash cells that are no longer functioning. The contents of the faulty cell will then be rebuilt using a checksum and will be moved to a properly working spare cell. The faulty storage cell will be marked as “bad” and will no longer be used. No data is lost in this process.

In addition, MOBOTIX cameras constantly monitor activated flash storage devices. MOBOTIX has developed a technology to test the wear of the flash device by logging the number of write/delete cycles (patent pending). The flash memory wear is automatically displayed in the status bar in the live camera image but it can also be viewed at any time in the **Admin Menu > Camera Status** dialog box.

Conservative Memory Usage Thanks To MOBOTIX MxFFS File System

MxFFS formatting of the MicroSD card means that MOBOTIX camera software will use the flash device as evenly as possible, thus allowing for the maximum possible number of write/delete cycles. This also means that all storage cells of the flash device will be written and deleted with the same frequency, if possible. MOBOTIX technology increases the life of the flash device considerably and also improves the security and the reliability of the storage process.

Storage Requirements And Life Expectancy Of MicroSD Cards

The life expectancy of a MicroSD card increases proportionally to the storage capacity, since the camera software will execute fewer write/delete cycles on each storage cell. The first deletion will begin once the SD card has been filled to capacity (first full cycle).

32 GB MicroSD Card: Storage Requirements And Life Expectancy					
	6 fps CIF	6 fps VGA		1 fps MEGA	1 fps QXGA
	M-JPEG	M-JPEG	MxPEG	M-JPEG	M-JPEG
File size single image	15 kB	45 kB	-	120 kB	240 kB
Storage required per second	90 kB	270 kB	75 kB	120 kB	240 kB
Storage required per 24 hrs	7.8 GB	23.5 GB	6.5 GB	10.4 GB	20.8 GB
Time for one full cycle	4 days	1.3 days	4.8 days	3 days	1.5 days

4 GB MicroSD Card: Storage Requirements And Life Expectancy					
	6 fps CIF	6 fps VGA		1 fps MEGA	1 fps QXGA
	M-JPEG	M-JPEG	MxPEG	M-JPEG	M-JPEG
File size single image	15 kB	45 kB	-	120 kB	240 kB
Storage required per second	90 kB	270 kB	75 kB	120 kB	240 kB
Storage required per 24 hrs	7.8 GB	23.5 GB	6.5 GB	10.4 GB	20.8 GB
Time for one full cycle	12 hours	4 hours	14.4 hours	9.2 hours	4.4 hours

All specifications are based on calculated averages

Caution

The MicroSD card's service life depends on production quality and frequency of use. Set the type of recording (event-controlled or continuous recording, frame rate, resolution) according to your specific requirements.

We recommend changing the pre-installed, high-quality 4 GB MicroSD card once a year if you have it constantly set to continuous recording.

Monitoring The Cell Wear Of Flash Storage Devices (Patent Pending)

MOBOTIX uses its own technology for this purpose and has a pending patent. You can view the flash wear in the status bar of the live image or by opening **Admin Menu > Camera Status**. In addition, the camera can send a warning message (for example, via e-mail) if the flash cell wear reaches a critical value (**Admin Menu > Storage on External File Server / Flash Device**). This leaves enough time to exchange the MicroSD card before the danger of data loss becomes too high.

File Server / Flash Device	
Type	SD Flash Card
File System	MxFFS
Flash Wear	1%
Transfer Buffer Usage	0% (0: 0%, max: 0%)
Lost Event Images	0
Sequences	1 (1 files)
Newest Sequence	1970-01-01 01:00:00 #0
Oldest Sequence	1970-01-01 01:00:00 #0
Current Usage	4.0 MBytes (0.4%)
Max. Size	936 MBytes

Format SD card:
Admin Menu > Storage
on External File Server/
Flash Device

The **Secure deletion mode – slow** option takes several hours. You can also use suitable applications on Windows, Linux/UNIX, and Mac OS X computers to repartition and securely format the SD card

3.4.2 Formatting The MicroSD Card

Before a MOBOTIX camera can store image and video sequences on a MicroSD card, the card needs to be formatted as MxFFS (MicroSD cards delivered with MOBOTIX cameras are already MxFFS-formatted). The following steps are necessary to format a storage device (**Admin Menu > Storage on External File Server / Flash Device**):

1. Make sure that there is a MicroSD card in the card slot of the MOBOTIX camera.
2. Click on **Format** in the **SD Flash Card** line.

3. Note down the characters shown in the **Encryption password** field or enter your own password. Next, click on **OK**.

Hint: The **Secure deletion mode – slow** option will ensure that the data on the MicroSD card is overwritten completely so that the data cannot be recovered in any way. However, keep in mind that this kind of safe formatting takes considerably more time.

4. In the next dialog box, enter the user name and the password of a user of the **admins** group and click on **OK** to confirm.

The MOBOTIX camera now starts formatting the card. It takes 5 to 12 minutes to format an 8 GB MicroSD card if the **Secure deletion mode – slow** option is disabled. If **Secure deletion mode – slow** is enabled, this may take anywhere between 3 and 14 hours.

Once the formatting has been completed, you can activate the MicroSD card for recording (see next section).



Caution

Make sure that you always wait until the formatting process has been completed before accessing the camera again. If the **Secure deletion mode – slow** option is disabled, this usually takes just a few minutes. You can only access the MicroSD card once MxFFS formatting has been completed.

Formatting with the **Secure deletion mode – slow** option enabled takes several hours. You can also use suitable applications on Windows, Linux/UNIX and Mac OS X computers to repartition and securely erase the MicroSD card.

3.4.3 Activate Recording

Follow these steps to activate the recording to a MicroSD card that has already been MxFFS-formatted (**Admin Menu > Storage on External File Server / Flash Device**):

1. Make sure that there is a MicroSD card in the card slot of the MOBOTIX camera.
2. Make sure that the MicroSD card is formatted in MxFFS format.
3. Activate the **SD Flash Card** option.
4. Click on **Set** and then **Close** to store the configuration.
5. Reboot the MOBOTIX camera (**Admin Menu > Reboot Camera**).

Once the camera has rebooted, make sure that the camera displays the **FR REC** symbols in its live image. If this is the case, the camera uses the MicroSD card as recording target. If not, you must activate the recording (see below).

Activating The Recording

If the **FR REC** symbols are not visible in the live image after rebooting, you need to activate the recording using one of the following methods:

- **In the web browser:** Automatic activation by clicking on the **Arm & Record** softbutton. Confirm this in the Easy Dialog by clicking on the **Yes** button.
- **In the web browser:** Manual activation via the Quick Control **Recording > Recording on** or in **Setup Menu > Recording**.
- **MxEasy:** It is possible to activate the recording based on the time or date using the Alarm Planner of MxEasy (see *MxEasy User Manual*).

Encryption And Authentication

All video data stored on the MicroSD card is encrypted to ensure security at all times. The password for this is defined during the card's formatting procedure and needs to be entered for authentication whenever the recordings are accessed (see next section).

Activate recording:
**Admin Menu >
Storage on External File
Server / Flash Device**

3.4.4 Accessing Camera Data

The following options facilitate access to the stored image and video sequences on a MicroSD card:

- **In the web browser:** Play back the recorded event images without audio directly from the MicroSD card using the Playback view of the camera software.
- **In MxEasy:** Play back the recorded video sequences with audio by accessing the MicroSD card in the MOBOTIX camera via the camera.
- **In MxControlCenter:** Play back the recorded video sequences with audio by accessing the MicroSD card in the MOBOTIX camera via the camera or with a direct access to the MicroSD card via a card reader connected to the computer. Access the card by setting the MicroSD card's drive/volume as a **directory** in MxControlCenter.

If the recordings stored on the MicroSD card were encrypted, you need to enter the password used for the encryption before you can access the data. If this is the case, both MxControlCenter and MxEasy will provide a dialog box for this purpose.

Caution

When **using the MicroSD card from one MOBOTIX camera in another MOBOTIX camera**, you need to make sure that the time on the original camera is in sync with the new camera. We recommend using automatic time synchronization via a time server (**Admin Menu > Date and Time**).

3.4.5 Deactivating The Card Memory

Follow these steps to deactivate the memory on a MicroSD card (**Admin Menu > Storage on External File Server / Flash Device**):

1. Activate the **None** option.
2. Click on the **Set** button at the bottom of the dialog box and then on **Close**.
3. Reboot the MOBOTIX camera (**Admin Menu > Reboot Camera**).

Once the camera has rebooted, make sure that the symbol **FR REC** is no longer visible in the bottom right-hand corner of the live image.

4. You can now safely remove the MicroSD card from the camera (see *Chapter 2, «Installation»*).

Caution

A **MicroSD card may only be removed from the camera after you have deactivated the recording** to MicroSD card and **rebooted the camera**. **Failing to do so may lead to data loss!**

Removing connected flash storage devices from the camera without properly deactivating them may lead to data loss and/or destroy certain areas of the storage device. This is limited to 4 MB of lost data per incident due to MxFFS formatting.

3.4.6 Using A MicroSD Card In A Different MOBOTIX Camera

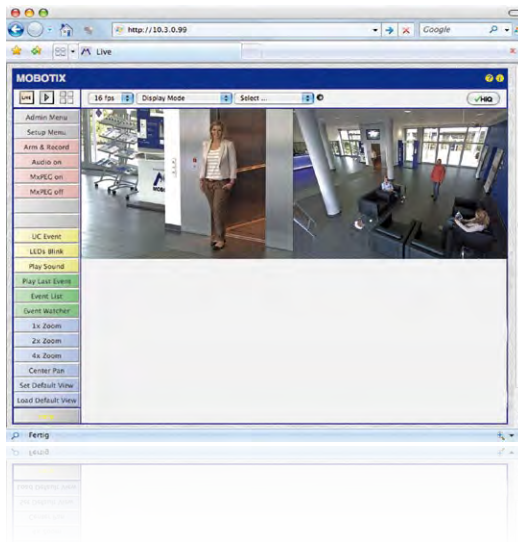
A MicroSD card containing recorded video data from a MOBOTIX camera can be inserted into any MicroSD card-enabled MOBOTIX camera. Once a MicroSD card recording has been activated (requires a reboot), the “new” MOBOTIX camera automatically synchronizes with the card and resumes recording. No data is lost in this process. Make sure that you deactivate MicroSD card recording before removing the card and then reboot the MOBOTIX camera.

If the MicroSD card’s contents are encrypted, you need to enter the same password in the “new” camera in the **Admin Menu > Storage on External File Server / Flash Device** dialog box. Otherwise, the camera cannot access the MicroSD card.

3.4.7 Limitations On Warranty When Using Flash Storage Media

MOBOTIX will not assume any responsibility for flash storage devices (for example, MicroSD cards or connected USB storage devices) delivered with or integrated into MOBOTIX cameras. The same applies to damage to flash storage devices or damage resulting from the use of devices that are not supplied by MOBOTIX.

3.5 Configuration In The Browser



3.5.1 Overview

A MOBOTIX camera can be completely configured using a JavaScript-enabled browser on all common operating systems (such as Windows, Linux, Macintosh, etc.). The camera provides a HTML-based user interface for this purpose. The camera executes the changes you make to the camera configuration via HTTP commands using programs and scripts of the embedded software. The settings are stored in the camera's flash memory.

This section contains an overview of the general browser settings of the MOBOTIX camera, as well as further configuration options. The **Software Camera Manual Part 2** contains more detailed descriptions of the software features.

3.5.2 General Browser Settings

- **Run the Quick Installation:** After booting the MOBOTIX camera for the first time, accessing the administration menu (**Admin Menu** button) will automatically start the Quick Installation. The Quick Installation assistant helps you in setting the most important parameters of the camera. For security reasons, you should set your own administrator password and disable public access to the camera.
=> (Software Camera Manual Part 2, Section 5.2)

- **Disable public access:** Guest users are only allowed to access the Guest screen of the camera without entering a password. If this is not desired, you should deactivate public access (**Quick Installation** or **Admin Menu > Users and Passwords**).
=> (*Software Camera Manual Part 2, Section 5.4.1*)
- **Add users and assign access rights:** Similar to a computer operating system, you can add users and user groups and assign the desired rights (**Admin Menu > Users and Passwords**, **Admin Menu > Group Access Control Lists (ACL)**). This approach allows individual access rights to be assigned or denied to camera-specific features based on the user groups.
=> (*Software Camera Manual Part 2, Section 5.4.1*)
- **Deactivate the automatic reboot:** In its factory state, every MOBOTIX camera will automatically reboot every morning at 3:36 a.m. All images in the camera's storage buffer will be deleted during this reboot. Images stored on external file servers, internal flash storage, or SD cards will NOT be affected by this reboot. Make sure that you deactivate the automatic reboot if this is not desired (**Admin Menu > Time Tasks**).
=> (*Software Camera Manual Part 2, Section 7.9.2*)
- **Optimize the image settings:** The factory image settings of MOBOTIX cameras deliver excellent images for most application scenarios and should not be changed. If you do wish to make changes, your changes should be minor and gradual. You should, however, set an image program according to the application scenario of the camera. Image programs provide a quick and simple method for adjusting the camera to the application scenario as they perform several configuration steps at once (**Image Programs Quick Control**).
=> (*Software Camera Manual Part 2, Section 5.5.2*)
- **Set the resolution of the live image:** By factory default, all MOBOTIX cameras are delivered with an image resolution of 640 x 480 pixels. You can select the desired resolution using the **Resolution Quick Control**.
=> (*Software Camera Manual Part 2, Section 4.3.3*)
- **Adjust the exposure:** The automatic exposure control of the MOBOTIX camera uses individually configurable windows to determine the best image exposure. Open the **Exposure Control Quick Control** and select a predefined set of exposure windows. If required, you can also define custom exposure windows (**Setup Menu > Exposure Settings**).
=> (*Software Camera Manual Part 2, Section 5.7*)

- **Activate event control and recording:** By factory default, the MOBOTIX camera's event control is disabled. Click on the **Arm & Record** button to activate event control. This will activate motion detection and recording. Cameras with integrated flash memory (MOBOTIX R models and models with SD card) will use the flash memory by default to store the image and video data (recording target). If desired, you can set additional events and adjust the settings of the recording and storage parameters (**Setup Menu > Event Settings, Setup Menu > Recording and Admin Menu > Recording to External File Server / Flash Device**).

=> (*Software Camera Manual Part 2, Chapter 7 and Chapter 8*)

- **Set up actions/messaging:** Upon detecting an event, the MOBOTIX camera can trigger alarms. These alarms can be adjusted to your needs and you can assign them to one or more events: playing back an alarm sound on the camera speaker, showing the visual alarm in the camera live image, sending an e-mail or network message with the alarm image, placing a phone call, uploading an alarm image to an FTP server, switching a signal output line of the camera (for example, for switching on the lights/opening a door).

For the settings, see **Setup Menu > Action Group Overview**. The actions to be performed are defined and used in these action groups in the form of "action profiles." The different action profiles can also be defined in the following areas: Admin Menu in the Hardware Configuration (profiles for signal output), Transfer Profiles (FTP, e-mail, network messages) and Sound and VoIP Telephony (sound profiles, VoIP profiles). For more information, see the online help for the camera (see *Section 3.6.12, «Online Help In The Browser»*).

- **Activate shock detector:** The S14 is the first MOBOTIX camera with a pre-installed shock detector (for all IT and Secure versions). If, for example, the camera's housing receives a blow, it automatically registers it and send a notification via a network message or telephone call. A general advantage is that MOBOTIX cameras are extremely tough, not least because of the absence of mechanical moving parts. This typically allows them to stay fully operational, in particular, when they are subject to strong vibrations. Open the **Setup Menu > Event Control > Environment Events > Edit** dialog box if you would like to activate the shock detector (and any other sensors).

3.5.3 Additional Configuration Options

- **Administering the camera:** You can modify the camera configuration in the Administration Menu or the Setup Menu.
 - **Admin Menu:** This menu contains the basic configuration dialog boxes of the camera (for example, passwords, interfaces, software updates).
 - **Setup Menu:** This menu contains the dialog boxes for configuring the image, event and recording parameters. Some of these settings can be changed using the corresponding Quick Controls in the live view.
- **Resetting changes:** If you would like to reset some larger changes in one dialog box without resetting the complete configuration, you can use the **Default** button at the bottom of the dialog box to reset only this dialog box's settings to the factory defaults. If you would like to reset all image settings, you can do so using the **Manage Settings > Restore Image Settings** Quick Control in the live image of the camera.
- **Storing changes permanently:** Once you have finished configuring the camera, you should always store the settings in the camera's permanent memory. You can do so in each dialog box (clicking on the **Set** button at the bottom of each dialog box will temporarily implement the change; when you click on **Close**, you will be asked to store the complete configuration in the camera's permanent memory) or in the Admin Menu (**Admin Menu > Store current configuration into flash memory**). The **Configuration** section of the Administration Menu provides more functions for storing, copying and managing camera settings. For more information on this topic, see *Chapter 5, «Basic Camera Configuration»* in the *Camera Software Manual Part 2*.
- **Time tasks and time synchronization:** Apart from a multitude of possibilities for controlling the camera using time (time tables, holiday and vacation, scheduled tasks, etc.), the camera can also synchronize its internal clock. This allows you to manually synchronize the camera with a computer or automatically using a time server or another MOBOTIX camera. The camera can use either NTP time servers or Time Protocol servers. For additional information, see *Section 5.4.2, «Date And Time/ Time Zones And Time Servers»* in the *Camera Software Manual Part 2*.
- **The More and Less buttons:** When opening some of the camera dialog boxes, the camera only shows the most important parameters. These dialog boxes have a **More** button in the bottom right-hand corner. Click on it to display additional options. If all options are displayed, click on the **Less** button to hide the additional options.

User Name: admin
password: meinsm

Admin Menu

Setup Menu

Make sure to permanently store changed parameters!

Automatic time synchronization using a time server

More:: Display advanced features

Less: Hide advanced features



3.6 Additional Notes

3.6.1 Do Not Sharply Bend The Connection Cables To The Sensor Modules

In order to ensure proper functioning of the sensor modules, you need to make sure that the connection cables to the sensor modules are not bent sharply.

3.6.2 Password For The Administration Menu

Accessing the Administration Menu of the camera (Admin Menu softbutton) is only possible after entering a user name and password.

- Factory default user name is **admin**.
- Factory default password is **meinsm**.

The Quick Installation assistant automatically appears when the Administration Menu is accessed for the first time. It provides an easy method to adjust the basic camera settings to the current application scenario. For security reasons, we highly recommend changing the default administrator password after the camera has been properly configured.

Enter the user name and password exactly as shown above. Note that all entries are case-sensitive.

Caution

Make sure that you store information on **user names and passwords** in a secure place. If you lose the administrator password and cannot access the administration menu, the password can only be reset at the factory. This service is subject to a fee!

3.6.3 Permanently Deactivating The Microphone

Deactivating a camera's microphone may be necessary in order to protect the privacy of persons at a workplace or for other reasons. You can permanently and irreversibly deactivate the microphone in the **Admin Menu > Loudspeaker and Microphone** dialog box.

Caution

This **deactivation occurs in the camera module itself and cannot be reversed**, even at the factory. Deactivating the microphone will also deactivate all the functions making use of the microphone/microphones (S14D's sensor modules).

3.6.4 Starting The Camera With The Factory IP Address

If the camera's IP address is not known, you can start the camera with its factory IP address. *Section 3.2.6, «Starting The Camera With The Factory IP Address»* describes this procedure in more detail.

The microphone can be irreversibly deactivated!

3.6.5 Resetting The Camera To Factory Settings

All settings of the MOBOTIX camera can be permanently reset to the factory default settings. This makes sense if you have, for example, obtained a camera without any information or you would like to reset all settings after testing the camera. In order to perform this procedure, you need to have administrative access to the camera (**admins** group). Open **Admin Menu > Reset** to reset the camera to factory defaults.

Note
Note: All defined users are deleted and the admin password is reset to the factory default when you reset the camera using Admin Menu > Reset . If you want to maintain the existing users, use the method described in <i>Section 3.2.6, «Starting The Camera With The Factory IP Address»</i> .

3.6.6 Activate Event Control And Motion Detection

In its default configuration, the camera's event control and video motion detection features are not enabled. In order to activate event-controlled recording, open **Setup Menu > General Event Settings** and activate the Arming switch. Another method is to click on the **Arm & Record** softbutton in the browser's user interface. The camera displays the motion detection window in the live image (dotted frame in the center) and the camera automatically stores images as soon as the motion detection window detects movements.

3.6.7 Deactivate Text And Logo Options

As camera arming is deactivated in its default configuration (see preceding section), the MOBOTIX camera displays only the text **WWW.MOBOTIX.COM**, the time stamp and the MOBOTIX logo at the top of the image. Once the camera arming has been activated, the text at the bottom of the live image (event, action, messaging and recording symbols) will also appear.

You can deactivate the status bar at the bottom of the live image and the text bar in the top left-hand corner by setting Text Display in the **Setup Menu > Text & Display Settings** dialog box to **Off**. Setting Text Display to **Date and Time** will only display the time stamp in the live image. To hide the logo in the live image, open **Admin Menu > Logo Profiles** and set Logo Display to **Deactivated**.

3.6.8 Deactivating The Camera Reboot

Per factory default, the MOBOTIX camera automatically reboots once a week between 3 a.m. and 4 a.m. The reason for this is that external influences (for example, radiation in high locations) can lead to camera malfunctions. The automatic reboot will refresh the camera's memory and will ensure proper operation without requiring any interaction on the part of the user. If desired, you can deactivate the automatic reboot of the camera in the **Admin Menu > Time Tasks** dialog box.

You can reset specific parts of the configuration



If the dotted rectangle in the live image is visible, the camera is armed

You can deactivate and customize the text and logo display settings

3.6.9 Browser

Current Internet browsers (Internet Explorer, Netscape, Mozilla Firefox, Safari, etc.) with enabled JavaScript can display the camera's live images with their standard settings. Text-based browsers cannot display the user interface and are not suitable for operating the camera.

Section 4.1.3, «Browser Settings» in the Camera Software Manual contains more detailed information on possible browser problems.

3.6.10 Cleaning The Camera And Lens

If the lens becomes dirty during the installation process, clean the lens using a lint-free cotton cloth. Make sure that the lens is still in focus after cleaning and adjust its focus if required.

Cleaning The Dome:

- Always mount and unmount the dome using the provided tool (M) in order to protect it from being scratched and from getting dirty.
- You should clean the dome at regular intervals. Always use a soft, lint-free cotton cloth for this purpose.
- If the dirt is more persistent, add a mild alcohol-free detergent without abrasive particles.
- Make sure you instruct cleaning personnel on how to clean the camera.

3.6.11 Safety Warnings

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

Electrical installation: Electrical systems and equipment may only be set up, changed and maintained by a qualified electrician or under the direction and supervision of a qualified electrician in accordance with the appropriate electrical guidelines.

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 S14, 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 valid regulations and comply with these laws. MOBOTIX AG is not liable for any illegal use of MOBOTIX products.

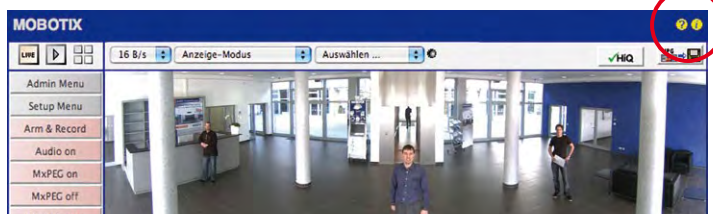


Network security: MOBOTIX products include all of the necessary configuration options for operation in Ethernet networks in compliance with data protection laws. The operator is responsible for the data protection concept across the entire system. The basic settings required to prevent misuse can be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

Never remove the dome: A S14D or S14M should never be operated without the transparent dome or protective lens screen mounted on it. The camera is no longer weatherproof when operated without the domes or protective lens screens. The exposed metal ring around the lens can become extremely hot when the exterior temperature is high, causing burns when touched.

3.6.12 Online Help In The Browser

For more information, see the News and Functional Overview pages in the online help of the camera's browser interface. Click on the  icon to open the camera's online help. Furthermore, detailed information on the camera and its current configuration is displayed in the **Camera Status** dialog box. Click on the  icon to open the relevant page.



3.6.13 RoHS Declaration

The products of MOBOTIX AG are in full compliance with Art. 5 of the German Electrical and Electronic Equipment Act and the E.U. Directive 2002/95/EC on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) as far as they are subject to these regulations. (You can find the MOBOTIX RoHS Declaration under www.mobotix.com, **Support > Spec Sheets**).

3.6.14 Disposal

Electrical and electronic products contain many reusable materials. For this reason, we would ask 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 may not be disposed of with 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).



3.6.15 Disclaimer

MOBOTIX AG does not assume any liability for damage that is the result of improper use of its products or failure to comply with the operating manuals or the applicable rules and regulations. Our **General Terms and Conditions** apply. You can download the current version at www.mobotix.com (using the COS link at the bottom of each page).



Notes

Original declaration
of conformity:

www.mobotix.com >

Support > Media Library >
Certificates

S14 FlexMount Camera

Konformitätserklärung

Declaration of Conformity

Déclaration de conformité

Hersteller:
Manufacturer:
Fabricant :

MOBOTIX AG

Produkt:
Product:
Produit :

Netzwerk-Kamera
Network camera
Caméra de réseau

Typ:
Type:
Type :

S14M, S14D mit bis zu zwei Sensormodulen
S14M, S14D with up to two sensor modules
S14M, S14D avec un ou deux modules d'objectifs

Bei bestimmungsgemäßer Verwendung erfüllt das bezeichnete Produkt die Bestimmungen der im Folgenden aufgeführten Richtlinien:

The product identified above complies with the essential requirements of the relevant standard, when used for its intended purpose:

Le produit désigné ci-dessus est conforme aux exigences fondamentales des normes s'y rapportant :

EMV-Richtlinie
EMC directive
Directive CEM

2004/108/EG

Angewendete harmonisierte Normen:
Harmonised standards applied:
Normes harmonisées :

EN 55022:2006+A1:2007; CISPR 22:2005+A1
EN 55024:1998+A1:2001+A2:2003
EN 61000-6-1:2007
EN 61000-6-2:2005

Weitere angewendete Normen:
Other harmonised standards applied:
Autres normes harmonisées :

CFR 47, FCC Part 15B
C-Tick AS/NZS 3548

Anschrift:
Address:
Adresse :

MOBOTIX AG
Kaiserstrasse
67722 Langmeil
Germany

+ TK-Nr. / Phone number / N° de communication :

Fon: +49 6302 9816-0
Fax: +49 6302 9816-190
E-Mail: info@mobotix.com



Langmeil, 02.05.2012

Ort, Datum
Place & date of issue (day/month/year)
Lieu et date

Dr. Ralf Hinkel
Vorstand/CEO, MOBOTIX AG

Name und Unterschrift
Name and signature
Nom et signature

MOBOTIX - The HiRes Video Company

**To demonstrate our confidence in the quality of our products,
MOBOTIX cameras were used to capture all the images that
appear in this manual.**

Manufacturer

MOBOTIX AG
Kaiserstrasse
67722 Langmeil, Germany
Germany

Executive Board

Dr. Ralf Hinkel

Registration Office: Kaiserslautern Local Court
Registration Number: HRB 3724

Tel: +49 6302 9816-103

Tax Code: 19/650/0812/1

Fax: +49 6302 9816-190

Tax Office: Kaiserslautern, Germany

<http://www.mobotix.com>

VAT ID:

sales@mobotix.com

DE202203501

You can find the latest version of this document at www.mobotix.com under **Support**.



Technical specifications subject to change without notice!



Discreet. Flexible. Hemispheric.

With the S14D FlexMount, two sensor modules featuring microphones are connected to a concealed camera housing via cables up to 2 m/6.6 ft long. Two adjacent rooms can be discreetly monitored with just one camera.



HiRes
6 Megapixel
4096 x 1536
Software zoom

Skyline
Format free
Each image format
freely definable

30 Frames/s
VGA (640 x 480)
30 F/s Mega

Virtual PTZ
Digital pan, tilt,
zoom

Backlight
Safe using CMOS
without mechanical iris

Internal DVR
Internal via Flash,
external via Network

Win/Lin/Mac
Recording
via Network on PC
up to 1 Terabyte

Microphone & speaker
Audio
bi-directional via IP,
variable framerates

SIP-Client with video
IP Telephony
Alarm notify,
cam remote control

VideoMotion
Multiple windows
precision pixel-based

-22 to +140 °F
Weatherproof
-30 to +60 °C, IP65,
no heating necessary

IEEE 802.3af
PoE
Network power
even in winter

Robust
No moving parts
fiber glass housing

Mac/CC/NoEasy
Licence free
Video-Management-
Software

HiRes Video Innovations

The German company MOBOTIX AG is known as the leading pioneer in network camera technology and its decentralized concept has made high-resolution video systems cost efficient.

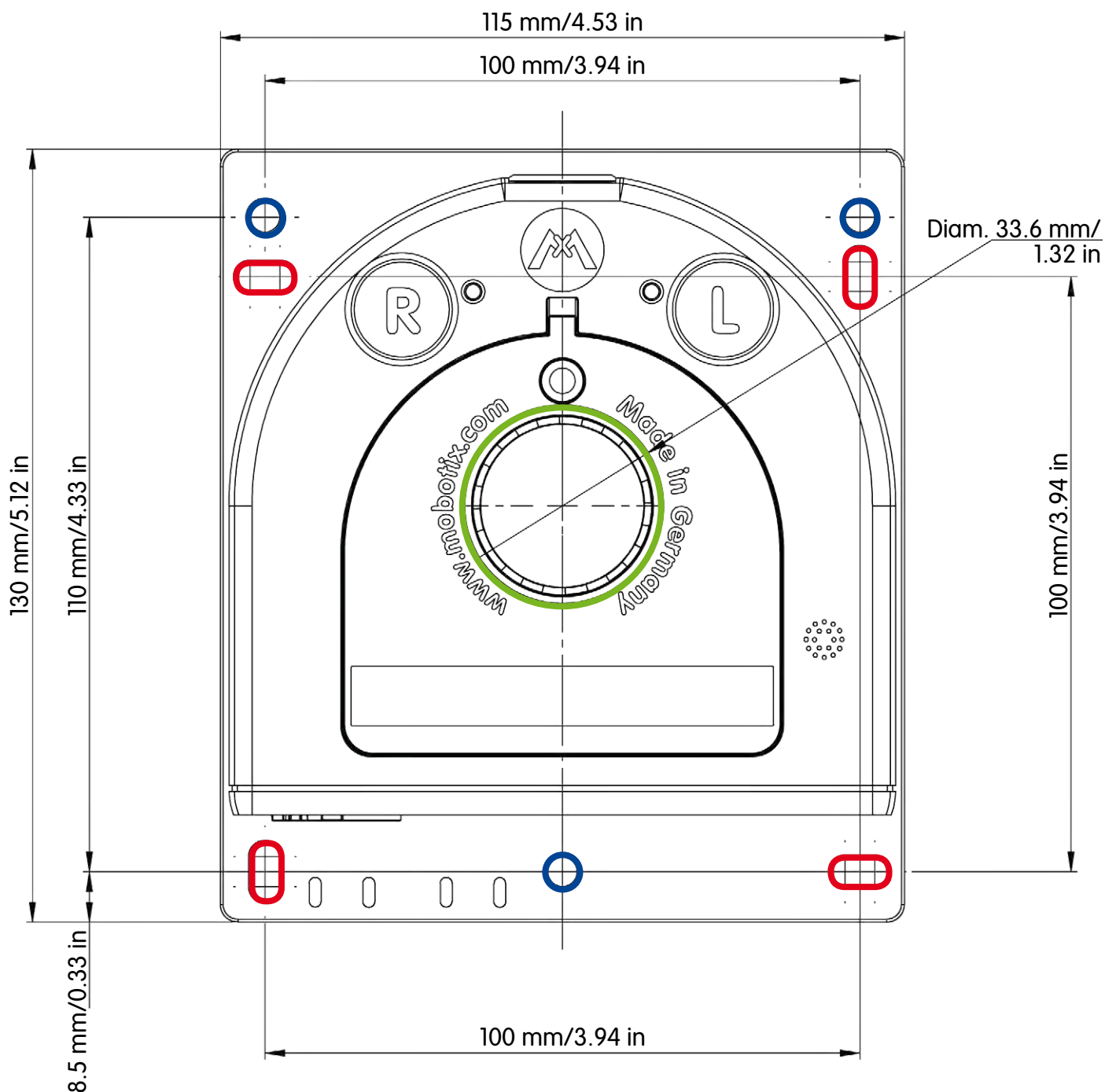
MOBOTIX AG • D-67722 Langmeil • Tel: +49-6302-9816-103 • Fax: +49-6302-9816-190 • sales@mobotix.com

S14 FlexMount Drilling Template

S14D and S14M

Scale 1:1

The HiRes Video Company



- Slot holes 10.5 mm / 0.41 in, diam. 5.5 mm / 0.22 in
- Tap holes M6
- Drill hole for lens diam. 33.6 mm / 1.32 in (S14M only)