Megapixel
1280 x 960
software zoom

25 Frames/s CIF (320 x 240)
12 Frames/s
VGA (640 x 480)
4 fps Mega

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

Tele/wide angle
Dual Lens
Automatic
day/night switching

microphone & speaker
Audio
bi-directional via IP
variable framerates

SIP-Client
IP Telephony
alarm notify,
cam remote control

Video motion
multiple windows
precision pixel-based

lip-syncronized audio
Recording
event-ringbuffer
30 cams each 25 fps

Live viewing
30 cams at 25 fps
all on one screen

Backlight
safe using CMOS
without mechanical iris

Concealed cabling
Wall bracket
with cable cover
for RJ45 wall outlet

Robust
no moving parts
fiber glass housing

M10
Camera Manual
Part 1

Complete integration for web and security

Current PDF File:
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MOBOTIX AG • Security-Vision-Systems • Made in Germany

www.mobotix.com • sales@mobotix.com • 3.5.2006

Security-Vision-Systems
MOBOTIX AG

MOBOTIX ... the new face of IP video

MOBOTIX Camera Data

Enter the data of your camera here!

Camera Model: _____

Camera Name: _____

Factory IP Address: ____ . ____ . ____ . ____

Current IP Address: ____ . ____ . ____ . ____

DHCP: activated ❑ deactivated ❑

Admin User Name: _____

Admin Password: _____

ISDN Dial-In Number: _____

ISDN User Name: _____

ISDN Password: _____

Notes:

Note: MOBOTIX offers inexpensive seminars that include a workshop and practical excercises:

Basic Seminar 2 days, **Advanced Seminar** 2 days.

For more information, see **www.mobotix.com**

CAMERA MANUAL PART 1

Note

Download the newest version of this document as a PDF file from **www.mobotix.com** under **Services > Manuals**.

SOFTWARE MANUAL PART 2

Note

The following chapters (4 and higher) are all part of the **Camera Software Manual**. The main headings are listed below to give you an overview of the *Software Manual* contents.

Note

Download the newest version of this document as a PDF file from `www.mobotix.com` from **Services > Manuals**.

Further information:
www.mobotix.com

1 INTRODUCTION

1.1 The MOBOTIX Concept

Megapixel Technology with Zoom, Tilt and Panning

With its high resolution of 1.3 M pixels and its true color imaging system, the MOBOTIX camera attains a resolution that is twelve times as high as on analog video systems that are commonly using CIF format. MOBOTIX also supports three digital zoom levels, tilting and panning.

Low Bandwidth Requirements

MOBOTIX' patent pending **MxPEG** streaming format allows fast live video with audio at extremely low network load (1 to 2 Mbps). Since the MOBOTIX camera itself detects movements in the image, video is only transmitted if movements occur and the video and audio data need to be stored.

Voice over IP and ISDN

MOBOTIX **MxPEG** video streaming format includes realtime audio and intercom features. Room surveillance with audio is possible using Internet Explorer. Alarm notification on your mobile is as easy as event-controlled voice messages directly from the camera.

Long-Term Storage Included

MOBOTIX cameras have an integrated long-term storage system for Linux, Windows and Mac OS X computers. Thanks to the decentralized approach, 30 live cameras can store images on a regular Pentium 4-class computer with **25 fps each**, including audio (these values may vary with the operating system).

30 Live Cameras Using MxViewer

The free Windows application for viewing up to 30 MOBOTIX cameras with audio now features an integrated layout editor for quick assembly of building plans—using full drag&drop support for positioning the live camera images. Load a floor plan as background image, drag&drop the cameras—done.

Event or Time-controlled

Just like event-controlled recording upon detecting movements in the image, the camera can also record when the volume picked up by the microphone exceeds a set trigger value. Using scheduled recording, time tasks can start and stop recording, uploading of images to a web site or sending of e-mails while running special programs on weekends and holidays.

Remote Alert Popup

In case of an alarm, MOBOTIX cameras automatically pop up windows or activate other functions at a remote security control center. The cameras can use network, ISDN or Internet connections for this purpose.

Day & Night

The MOBOTIX/Night models with two image sensors (color and B/W) deliver brilliant color images during the day and crisp B/W images at night. Depending on the illumination, the cameras switch lenses automatically.

Weatherproof

MOBOTIX cameras (Outdoor models) are certified according to IP65 and are designed for outdoor as well as indoor usage. As the cameras do not have any moving parts, they are extremely robust and resistant against heat or cold (-30°F to +60°C; -22°F to +140°F).

Secure and Flexible Installation Using the SecureFlex Wall Mount

The **SecureFlex wall mount** provides for easy mounting of the Outdoor models to a wall or a ceiling and also allows pointing the camera into virtually any direction. The concealed cabling improves security; it covers RJ45 wall outlets and enhances the visual impression of the installation. The SecureFlex wall mount is a standard accessory of all Secure Outdoor models and available as optional accessory for all other M10 Outdoor models.

Logos, Animated or Freestyle

The Logo generator of the MOBOTIX camera allows integrating different banners and graphics into the current camera images—with optional scheduler control. MOBOTIX cameras are the only cameras supporting animated and transparent graphics.

1.2 The MOBOTIX Product Advantages

Product Advantages

- High image quality with a resolution of 1.3 M pixels.
- Fully browser-based - no software installation required.
- Simple connection via Ethernet, DSL or ISDN.
- Camera configuration and playback of recorded images from any standard browser.
- Lip-synchronous audio and intercom features via Ethernet/DSL and ISDN.
- Audio room surveillance using standard browser (Internet Explorer).
- Minimum network load thanks to innovative MxPEG compression (patent pending).
- Integrated event-controlled or scheduled recording.
- Live recording of up to **30 cameras with full 25 fps each** on one single Pentium 4-class PC—including audio.
- No limitation regarding the number of cameras and storage media; the system remains scalable.

- **Long-term storage of video** including audio or individual images in a ring buffer on a standard PC or file server.
- Integrated buffer can bridge network outages of up to 4,000 images or 6 minutes video.
- Maintenance-free and weatherproof from -30°C to +60°C (-22°F to 140°F) as the system has no moving parts.
- Alarm notification via e-mail, SMS or phone call.
- Layout editor in **MOBOTIX MxViewer** for quickly creating building layout plans with cameras.
- **Backlight correction** with predefined and customized exposure areas.
- Integrated sensors, video motion detectors, passive infrared sensor, microphone and speaker.
- Flexible positioning and concealed cabling thanks to the SecureFlex wall mount for Outdoor models (standard accessory of M10-Secure, optional accessory for all other M10 Outdoor models).

1.3 Feature List

1280 x 960 pixels

The MOBOTIX camera includes the following main features (some features are model-dependent):

- **Live images** of up to 1280 x 960 pixels (Web and Secure models) resolution via network, ISDN, GSM, GPRS, UMTS, wireless, also adapted for **PDAs**.
- **Digital zoom** with three stages (1x, 2x, 4x) and integrated panning (from 2x: clicking in the browser image will move the visible image section in that direction; Web and Secure models only).
- **Audio/video recording** with three different recording modes: Event recording with audio, continuous recording with variable frame rate and audio as well as event-controlled Snap Shot recording of JPEG images.
- **File server tests** can monitor a file server and use one or more of the defined messaging options for error notification (IT and Secure models).
- **Camera tests** where several cameras monitor each other, with failure notification using the defined messaging options (IT and Secure models).
- **Playback** of recorded images/video sequences with audio in the integrated video management system.
- **MultiView** screen for displaying multiple cameras or events in one browser window.
- **Event notification** by e-mail, SMS (using a provider), voice notification by phone using pre-recorded messages, sounds and by visual alarms (e.g. red frame in Live image) using two separate messaging paths.
- **Object tracing** for analyzing the paths of objects that are moving in the image (IT and Secure models).

- **Logo generator** for displaying logos in the camera images with dialogs for managing image files, image and logo profiles for controlling logo display (Web and Secure models).

Logo generator

- Logos can have **transparent areas** and can be displayed partially transparent at the same time (creating a watermark effect), banner rotation and animations are also possible.
- **Transfer profiles** for improved handling of FTP, E-Mail, phone calls, IP Notify transfers and messages.
- **Time Tables** for handling customized days, e.g. for holidays and vacations. The time tables are used to control the camera's arming, image recording, action, messaging, logo, obscure image and other features.
- **Speaker phone** with speak, listen and intercom modes via Internet telephony (SIP) using the integrated microphone and speaker (IT and Secure models).

Speaker phone

- **Phone Call-In via ISDN or IP telephony** to remotely control the camera using a touchtone telephone (retrieve camera information, establish an Internet connection, announcement of retrieved IP address, intercom feature, etc.).

Telephony features using ISDN or SIP connections (Internet telephony)!

- **MxPEG video compression** using **MOBOTIX MxViewer**. The ActiveX plug-in for Internet Explorer users brings all advantages of MxPEG (including the camera's audio stream) to the browser-based user interface (only on Windows computers).
- **Routing** allows using other connections besides the default connection. This feature provides ways and means to use different gateways and ISDN connections for different tasks (IT and Secure models).
- **DynDNS client** for accessing the camera using a symbolic name (e.g. `mymobotixcam.dyndns.org`) although the provider is assigning a new IP address every time the camera connects to the Internet.
- **Backup operating system** automatically takes over when rebooting the camera after updating the system software has failed, allowing you to 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).

Software Updates

MOBOTIX provides **free** software updates at regular intervals that improve and expand the camera's functionality. To download the update, go to **`http://www.mobotix.com`** and open **Services**. Chapter 6, *Software Update*, provides more information on the process.

Free software updates on www.mobotix.com

1.4 Important Notes

1.4.1 Password for the Administration Menu

Administration menu:
User: admin
Password: meinsm

The administration area of the camera (**Admin Menu** button) is protected by a user name and password:

- User name is `admin`
- Password is `meinsm`

Enter the user name and password exactly as shown above. Note that both entries are case-sensitive. When accessing the administration menu for the first time, the **Quick Installation** wizard will help you set the most important parameters that are relevant for your requirements. **For security reasons, it is highly recommended to change the adminstrator password after the camera has been configured properly.**

CAUTION: Make sure that you store information on user names and passwords in a secure place. In case you loose the administrator password and cannot access the Admin menu, the password can only be reset at the factory. This service is not free!

1.4.2 Password for ISDN Dial-In

ISDN Dial-in
User: linux
Password: tux

Dialing into the camera via ISDN is protected by a separate password. When setting up a dial-in connection from a computer, you need to provide this information:

- User name is `linux`
- Password is `tux`

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

1.4.3 Permanently Deactivating the Microphone

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

CAUTION: This deactivation is permanent and cannot be reversed even by MOBOTIX engineers. Deactivating the microphone will also deactivate all features that use the camera's microphone.

1.4.4 Starting the Camera Using the Factory IP Address

If the camera's IP address is not known any more, you can start the camera with its factory IP address. Section 3.6, *Starting the Camera Using the Factory IP Address*, describes this procedure in more detail.

1.4.5 Resetting the Camera to Factory Defaults

All settings of the MOBOTIX camera can be reset permanently 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 access to the administration area of the camera (Admin rights). Open **Admin Menu > Reset ...** to reset the camera to factory defaults.

Note: In contrast to the method described in section 1.4.4, *Starting the Camera Using the Factory IP Address*, all users (except the **admin** user) will be deleted when resetting the camera to factory defaults. Likewise, the admin user's password will be reset.

The configuration can also be reset partially

1.4.6 Activating Event Control for Security Applications

In its default state, the camera's event control and video motion detection features are **not enabled**. In order to activate event control as a whole, open **Setup Menu > General Event Settings** and activate the **Arming** switch or click on the **Arm & Record** softbutton of the browser interface. The video motion detection window is visible again (dotted frame in the center of the live image) and the camera stores images as soon as the video motion window detects movements.

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

1.4.7 Deactivating Text and Logo Options

As the camera arming has been deactivated as per factory default (see preceding section), the MOBOTIX camera only displays 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 texts at the bottom of the live image (event, action and messaging symbols) will also appear.

Text and logos can be also deactivated or customized to your liking

If the camera is armed, you can deactivate the status text at the bottom and the text at the top left corner of the live image by setting **Text Display** in the **Setup Menu > Text & Display Settings** dialog to *Off*. Setting **Text Display** to *Date & Time* will only display the time stamp in the live image. In order to hide the logo in the live image, open **Admin Menu > Logo Profiles** and set **Logo Display** to *Disable*.

1.4.8 Deactivating the Daily Reboot of the Camera

In its factory state, the MOBOTIX camera will automatically reboot every morning at 3:36 am. In very rare cases, external influences (e.g. 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.

Deactivating the camera reboot

Open **Admin Menu > Time Tasks** and deactivate or delete the *Reboot camera* task. This will prevent the camera from rebooting automatically.

1.4.9 ISDN Compatibility Note

This product is compatible with **Euro ISDN standard TBR3/TBR 3A1**.

Note: MOBOTIX offers special models for the Japanese market that support the Japanese ISDN standard. For additional information on this topic, see the Japanese section at **www.mobotix.com**.

1.4.10 Browser Hints

Current browsers with activated **JavaScript** (Internet Explorer, Netscape, Mozilla, Firefox, Safari, Konqueror, Opera, …) can show the camera's live images with their standard settings. Text-based browsers (e.g. lynx) cannot display the user interface and are *not* suitable for operating the camera.

Section 4.8, *Browser Settings*, contains more information on browser compatibility. Chapter 12, *Troubleshooting*, contains more information on how to track and remove errors when operating the camera.

1.4.11 Safety Notes for Operating MOBOTIX Cameras

Electrical surges can be induced by other electrical appliances, improper wiring, but also from the outside (e.g. lightning strikes in phone or power lines).

MOBOTIX cameras are protected against small **electrical surges** by numerous measures. These measures, however, cannot prevent the camera from being damaged when stronger electrical surges occur.

Special care should be taken when installing the camera **outside of buildings** for **protection against lightning**, since this also protects the building and the whole network infrastructure.

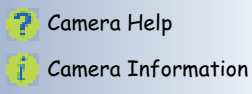
MOBOTIX recommends having MOBOTIX cameras installed only by specialists accustomed to installing network devices and having proper respect for the pertinent regulations regarding lightning protection and **fire prevention** as well as the current technology for preventing damages from electrical surges.

Section 2.10, *Wiring, Fire Prevention, Lightning and Surge Protection*, contains more information on these topics.

Additional Information

Open the **News** and **Functional Overview** pages of the **camera help** to find additional information. Simply click on the yellow button: 

Another source of information on all dialogs and parameters of the MOBOTIX camera is the **Reference Manual** that you can download from **www.mobotix.com**. The Reference Manual consists of the MOBOTIX camera's online help in one PDF file.



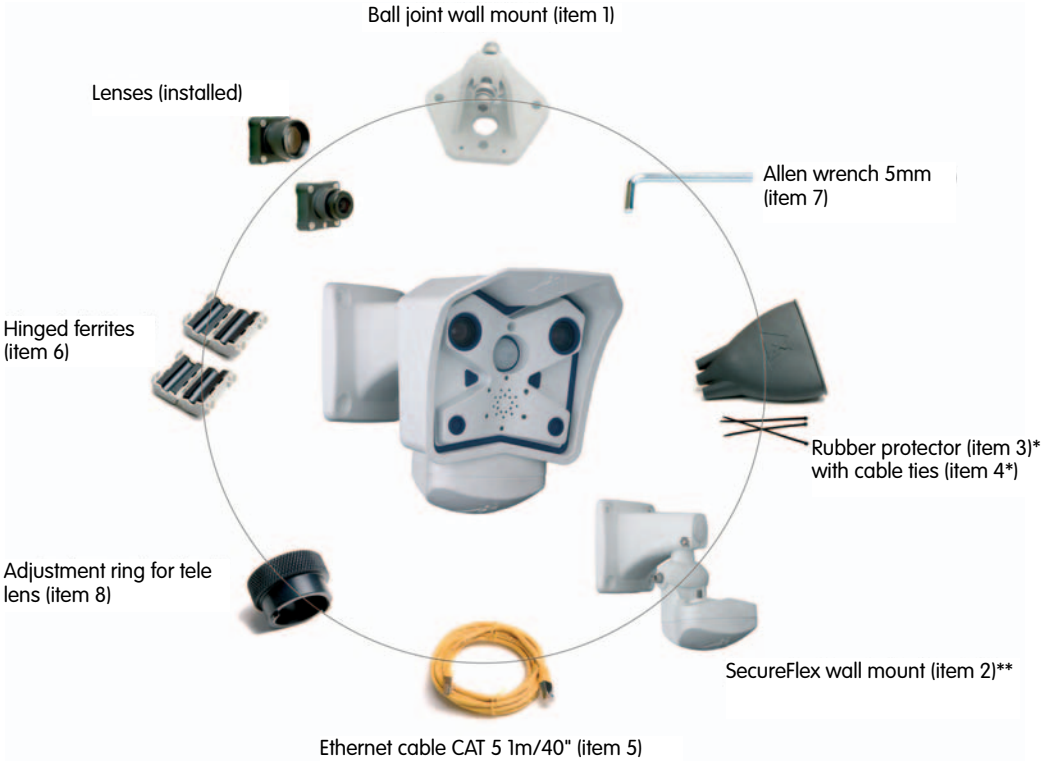
2 MOUNTING THE CAMERA

2.1 Delivered Parts, Camera Components and Dimensions

The MOBOTIX M10 is delivered completely assembled with a **ball joint mount** (**IT** and **Basic** models) or the **SecureFlex** wall mount (**Secure** models), so the camera can be used out-of-the-box.

2.1.1 Delivered Parts

Make sure to check the delivered parts



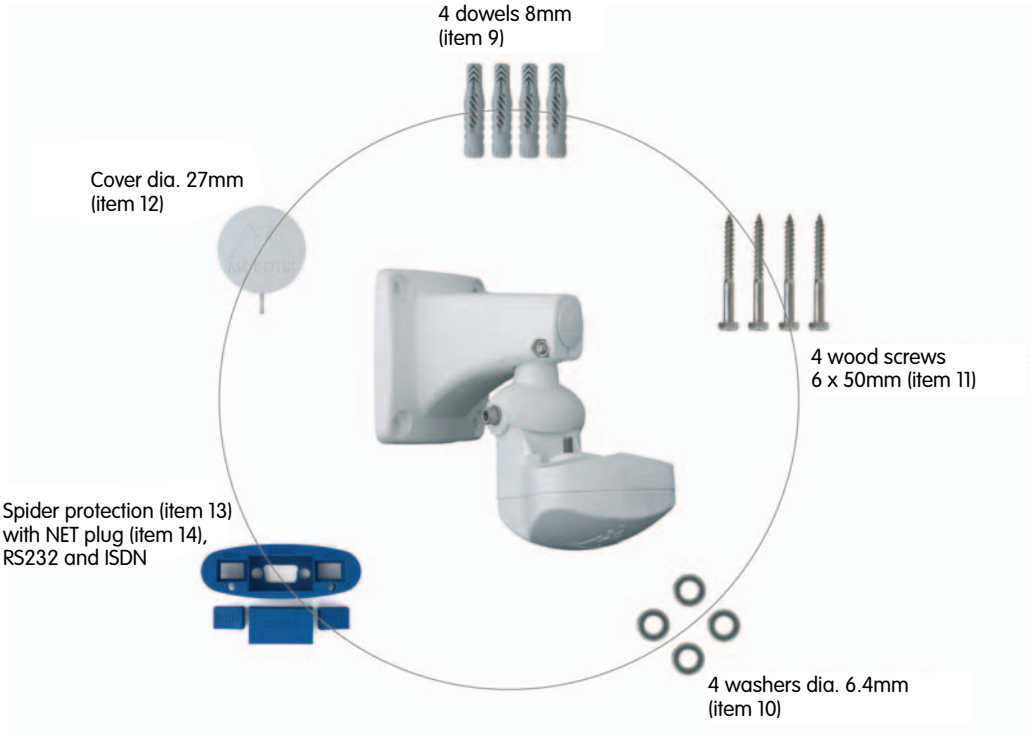
Item	Count	Part Name
1	1	Camera with ball joint mount*
2	1	SecureFlex wall mount for mounting on ceiling or wall**
3	1	Rubber cable protector*
4	3	Cable ties*
5	1	Ethernet cable
6	2	Hinged ferrites
7	1	Allen wrench (5 mm)
8	1	Adjustment ring for tele lens

* Basic/IT models only

** Standard delivery for M10-Secure cameras, optional accessory for all other M10 models

2.1.2 Components of the SecureFlex Wall Mount

The SecureFlex wall mount is a **standard accessory of all M10 Secure Outdoor models** and is available as optional accessory for all other M10 Outdoor models.



Flexible installation at walls or ceilings using the SecureFlex wall mount

Item	Count	Part Name
9	4	Dowels 8 mm
10	4	Stainless steel washers Ø 6.4 mm
11	4	Stainless steel wood screws with hex head 6x50 mm
12	1	Cover Ø 27 mm
13	1	Spider protection (installed)
14	1	Additional **NET** plug for spider protection (Ethernet)

Caution

Never use screws with countersunk heads to fasten the mount, as these screws will destroy the mount.

2.1.3 Mounting Options and Tilt Capability Using the SecureFlex Wall Mount

Mounting to a ceiling or wall

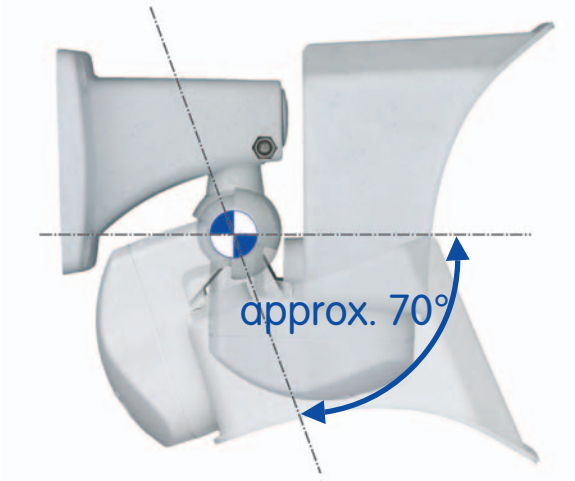
Mounting to a wall

Mounting to a ceiling

Tilting horizontally (wall mount)

Flexible positioning

Tilting vertically (wall mount)

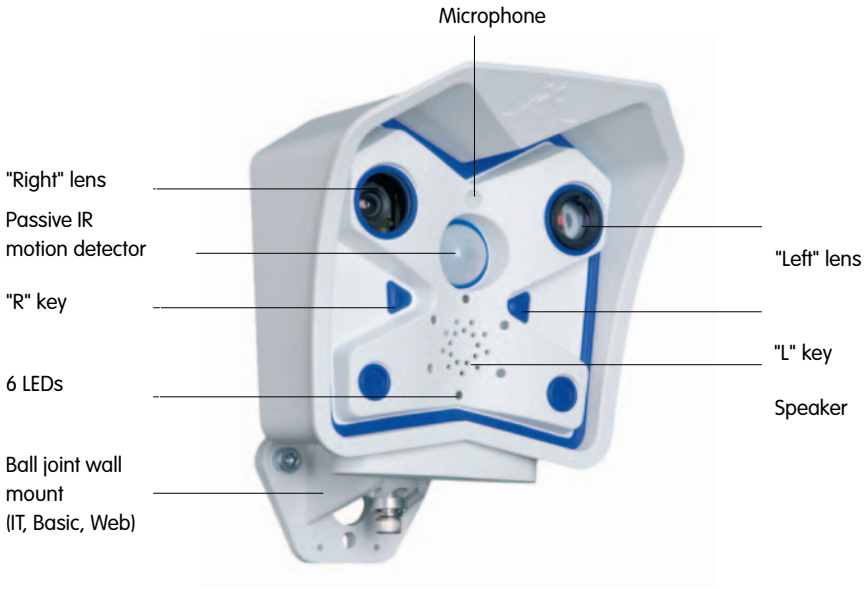


2.2 Camera Housing and Connectors

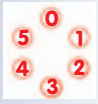
The MOBOTIX M10 camera housing is made of fiber-reinforced **plastic (PBT-30GF)**. From mid-2006, the housing's color is **white** for all camera models.

2.2.1 External Sensors

- PIR sensor
- Microphone
- IR remote control



Signals of the camera LEDs:



0 On

1 Camera

2 Ethernet

3 Operating Mode

4 ISDN/VoIP

5 Camera

2.2.2 Connectors

- 10BaseT (Ethernet network)
- In/Out / RS232
- ISDN

2.3 Dimensions (Outdoor Models)

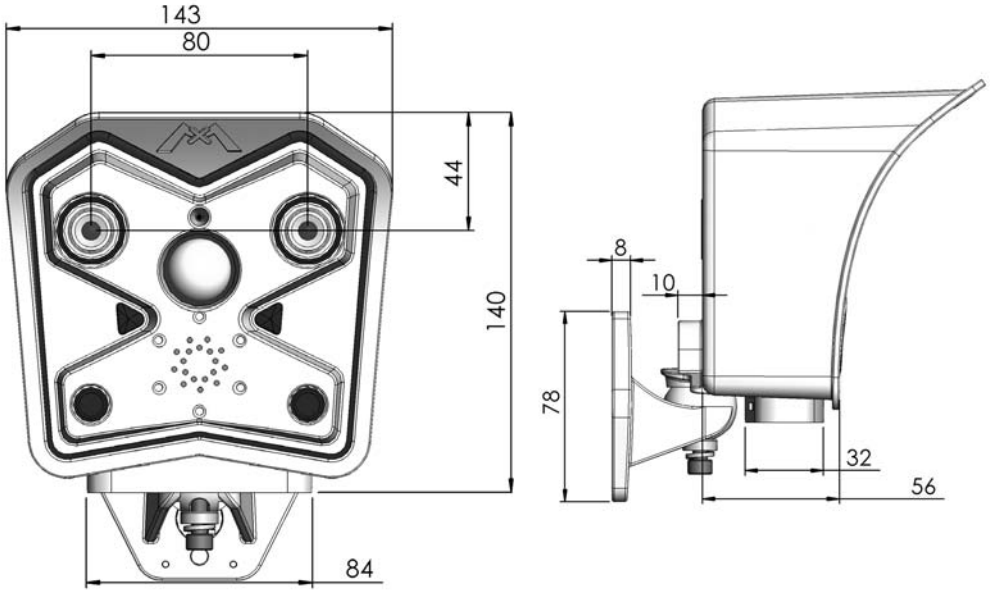
2.3.1 Outdoor Models With Ball Joint Mount

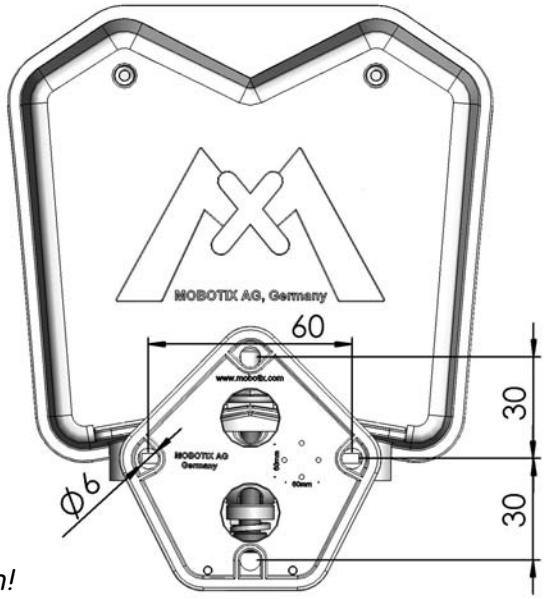
Using the ball joint mount, the MOBOTIX M10 Outdoor models are easily mounted to a wall or—when using the appropriate accessory—to a mast. See the following figures to find the camera measurements and how to position the holes for fixtures.

Check the appendix for the drilling template, which will be helpful when drilling the holes. For more detailed information on planning, please download the **MOBOTIX Planning Aid** from **www.mobotix.com**.

Download planning aid from www.mobotix.com

The planning aid also contains a table with image angles for the different lenses





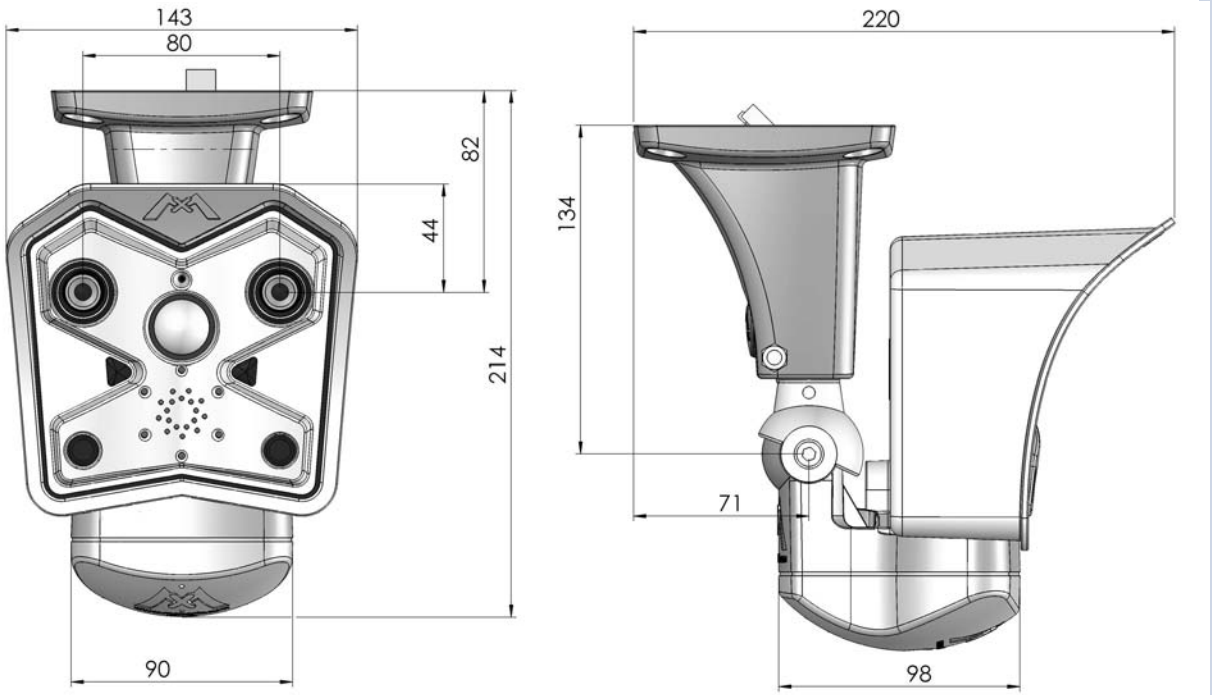
All measurements in mm!

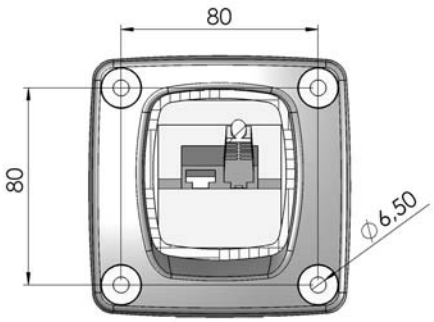
2.3.2 Outdoor Models With SecureFlex Wall Mount

The SecureFlex wall mount (item 2) provides for easy mounting of the MOBOTIX M10 Outdoor models to a wall or ceiling. The concealed cabling improves security and enhances the visual impression of the installation. By design, the SecureFlex wall mount covers RJ45 wall outlets, allowing for perfect positioning of the camera.

The SecureFlex wall mount is a **standard accessory of all Secure Outdoor models** and is available as optional accessory for all other M10 Outdoor models.

Check the appendix for the drilling template, which will be helpful when drilling the holes. For more detailed information on planning, please download the **MOBOTIX Planning Aid** from **www.mobotix.com**.





Download planning aid from www.mobotix.com

The planning aid also contains a table with image angles for the different lenses

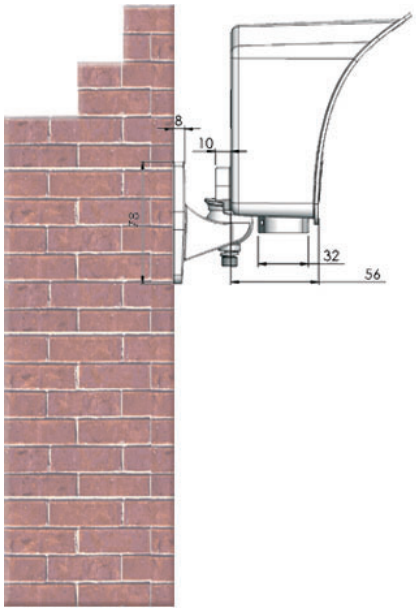
All measurements in mm!

2.4 Mounting Outdoor Models With Ball Joint Mount

2.4.1 Mounting the Ball Joint Mount to a Wall

Before attempting to mount the camera, make sure that you have found the best camera position. It is important that the camera's field of view is not obstructed in any way.

Wall mount with ball joint



Once the camera has been mounted to the wall, you can fine-tune its position. Using the integrated ball joint mount, the camera can be turned horizontally and tilted vertically.

The camera can be **tilted** within the following ranges

- **horizontally**: approx. 35°
- **vertically**: approx. 60°

When the camera is looking downwards and sideways, you will need optional accessory to properly position the camera (see section 2.9, *Camera Accessories for Mounting*).

Pan/tilt heads for remote-controlling the camera position

Note

In order to remote-control the position of the MOBOTIX camera, the camera can control a **pan/tilt head*** using its serial interface (RS232). The pan/tilt head is controlled using the programmable buttons of the camera's browser-based user interface or a joystick (not available for Web and Basic models).

*Pan/tilt heads are available from third-party suppliers. Please contact our support team for more information (support@mobotix.com).

Caution

Never mount the MOBOTIX M10 outdoor models **upside down** in outdoor locations or in humid environments, since humidity from condensation processes may accumulate.

M10-Secure Indoor models

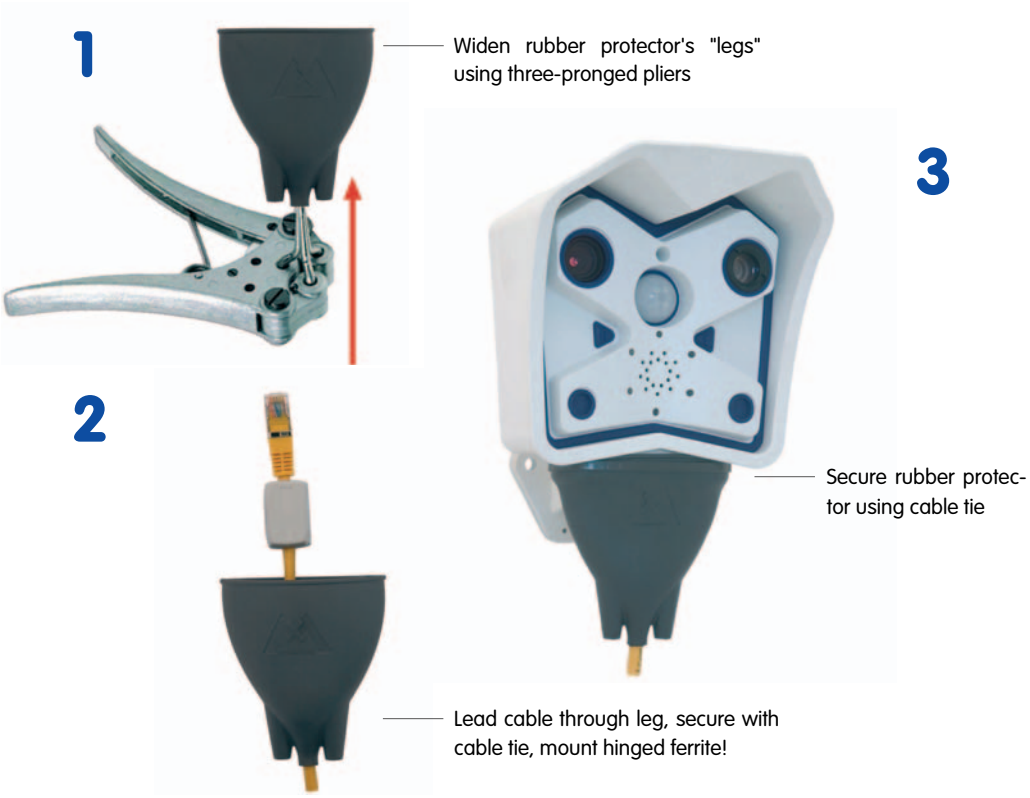
For mounting the cameras to a ceiling, MOBOTIX in the past offered the **SecureFlex wall mount** (see section 2.5, *Mounting Outdoor Models With SecureFlex Wall Mount*) as well as the **Secure Indoor models**. By design, these cameras are also easily mounted to a ceiling (see section 2.7, *Mounting Indoor Models to a Wall or Ceiling*).

2.4.2 Finishing the Installation

All MOBOTIX M10 Outdoor models are **IP65**-certified. For outdoor use with the ball joint mount, MOBOTIX supplies a rubber protector (item 3) for the cameras, which prevents water from entering the camera along the cabling. At the same time, it allows the camera to "breathe" and prevents condensation water from accumulating.

Make sure to attach the supplied hinged ferrites to all data cables (ISDN/Ethernet/RS232). Genuine MOBOTIX power supplies are already delivered with an integrated ferrite!

Mounting the rubber protector and the hinged ferrites



If no three-pronged pliers are available, cut 1 cm (3/8") into the cable guide of the rubber protector

Secure cable using a cable tie around the "leg" of the rubber protector!

Caution: Never seal off rubber protector with silicone or other sealant!

- Insert three-pronged pliers to hold the hole of the "leg" open.
- Insert one cable (with the connector) through the leg's hole in the rubber protector.
- Attach a hinged ferrite (item 6) to every cable (Ethernet, ISDN, RS232; max. distance to connector 5 cm/2"). Make sure that the hinged ferrite snaps shut completely.
- Insert the cables into the appropriate connectors of the camera.
- Pull the rubber protector over the camera's collar at the bottom.
- Attach the cable ties around the "legs" of the rubber protector to prevent the cables from being pulled out.
- Now firmly attach one cable tie around the camera collar to prevent the rubber protector from slipping off the camera.

Caution

Never use silicone or any other sealant to seal off the rubber protector of the camera, since the camera will not be able to "breathe" and condensation can accumulate!

Note

If you need more ferrites for your application, you can order the required ferrites by calling MOBOTIX (+49 (631) 30 33 101) or by sending an e-mail to **support@mobotix.com**.

Mounting the Camera

Find the folded drilling template at the end of the manual!

Make sure that the drilling template is not scaled down when printing!

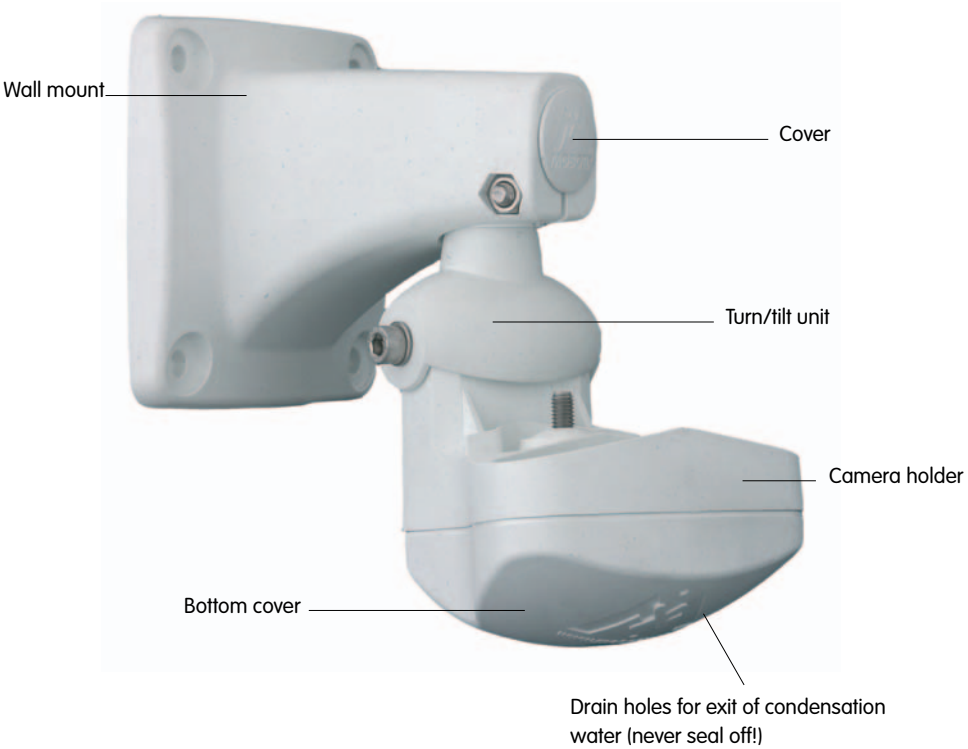
- Copy or print the **drilling template** for the ball joint mount at the back of the manual (make sure *not to scale* the template), then drill the holes for the fixtures.
- **Connect the cabling** and properly fasten the **ball joint** mount using the supplied screws and the appropriate washers.
- Establish a **connection** from your computer to the camera (see chapter 3, *Operating the Camera*) and adjust the camera position according to the **live image** delivered by the camera.
- Properly tighten the screws of the mount itself and make sure that all screws are properly fastened.

Caution

Never use screws with countersunk heads to fasten the mount, as these screws will destroy the mount.

2.5 Mounting Outdoor Models With SecureFlex Wall Mount

The **SecureFlex wall mount (item 2)** provides for easy mounting of the MOBOTIX M10 Outdoor models to a **wall** or a **ceiling**. Its innovative and flexible design allows pointing the camera in virtually any direction. On top, the SecureFlex wall mount covers RJ45 wall outlets (without the frame) and the **concealed cabling** improves the security of the camera.



Standard delivery for Secure Models

Note

The design of the SecureFlex wall mount does not allow for connecting the external power supply. It is recommended to use either a **Network Power Adapter** or a **Network Power Rack** to inject the power into the Ethernet or ISDN cabling or to use an appropriate extension cable.

Network Power Adapter or Network Power Rack should be used

Caution

The SecureFlex wall mount must not be installed upside-down, as the camera will not be dustproof and resistant against water jets (IP65) any more! The holes in the bottom cover always have to point downwards.

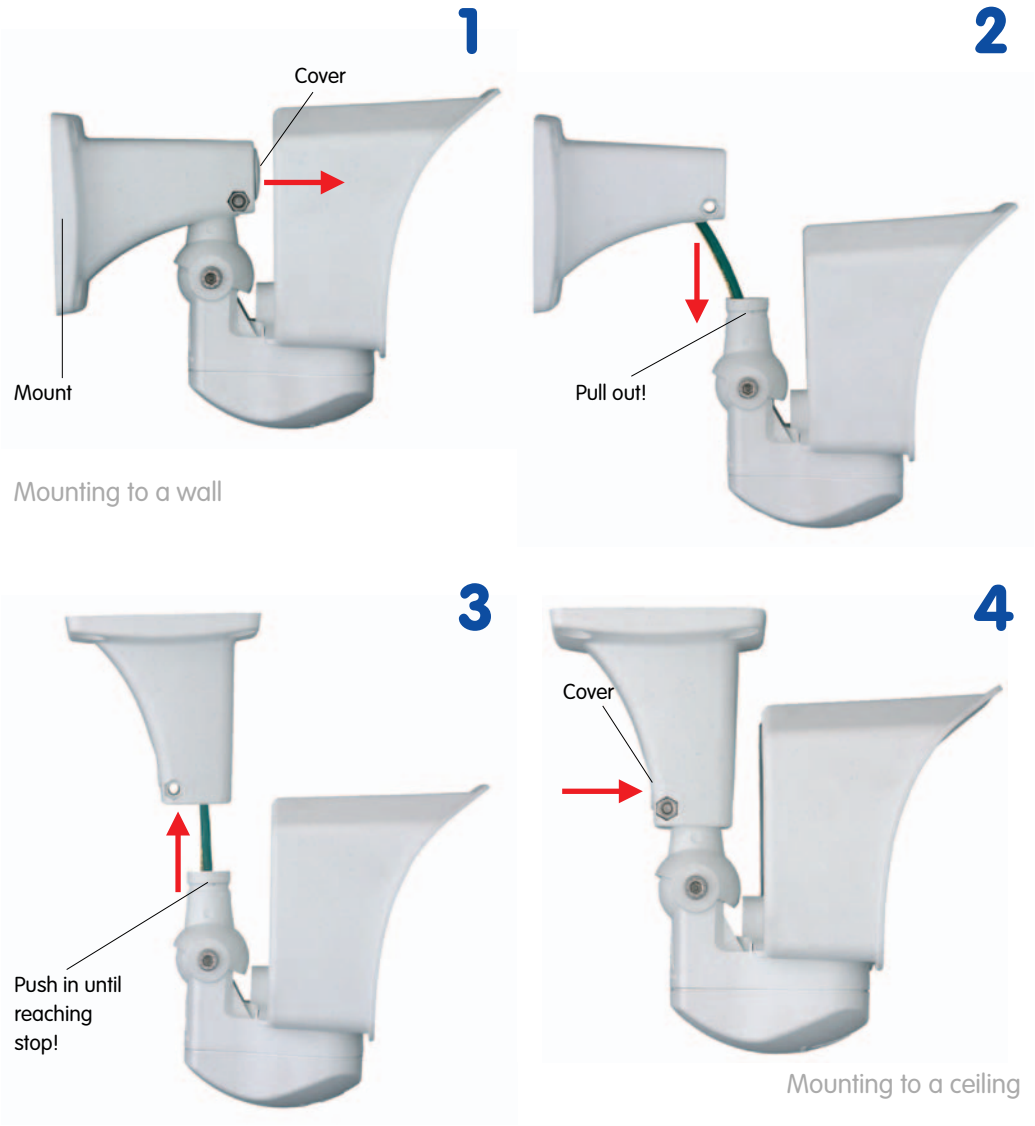
2.5.1 Converting the Wall Mount to Ceiling Mount

If the camera is to be mounted to a ceiling, it is necessary to convert the SecureFlex wall mount. Proceed as outlined in the following:

- Unscrew the **Allen screw** in the mount, which holds the turn/tilt unit in place (5 mm Allen wrench, item 7). Remove the Allen screw, the washer and the hex nut from the mount and unplug the cover.
- Gently pull the **turn/tilt unit** and all cables out of the vertical opening of the foot.
- First insert the **cables**, then the turn/tilt unit into the horizontal opening of the foot (all the way to the stop).
- Place the hex nut into the corresponding hole, insert the **Allen screw** with washer and lightly fasten the screw so that you can still easily move the camera.

Converting the ceiling mount back to wall mount follows the steps in reverse order. Only insert the supplied **cover** into the remaining opening once you have finished mounting the camera.

Converting from wall mount to ceiling mount in four steps



Mounting to a wall

Mounting to a ceiling

2.5.2 Determining Where to Mount the Camera

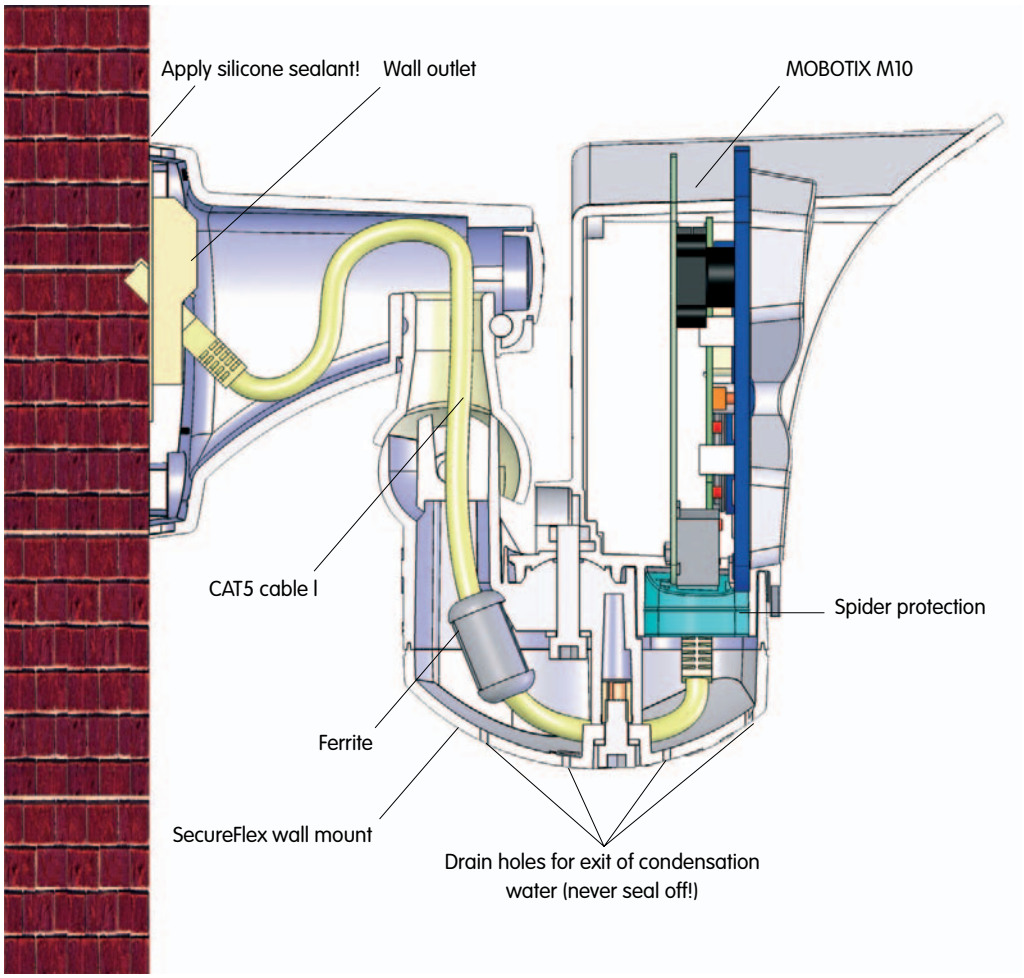
Before attempting to mount the camera to a wall or ceiling, make sure that you have found the best camera position. It is important that the camera's field of view is not obstructed in any way.

Once the camera has been mounted to a wall or ceiling, you can fine-tune its position. Thanks to the design of the SecureFlex wall mount, the camera can be turned freely horizontally and tilted vertically until the built-in stops are reached.

The camera can be **turned/tilted** within the following ranges:

- **horizontally**: approx. 180°
- **vertically**: approx. 70°

The mounting position should be set in such a way that the wall outlet touches the upper rim of the mount's foot.



Mounting the SecureFlex wall mount covering a wall outlet

2.5.3 Mounting the SecureFlex Mount to a Wall

Mounting the SecureFlex mount to a wall allows **covering RJ45 wall outlets (without frame)** and also allows using a defined network end point.

The SecureFlex wall mount should completely cover the wall outlet

When positioning the wall outlet, make sure that the outlet lines up with the upper rim of the mount later on (see figure).

If no wall outlet is present, use a suitable extension or an adapter to connect the camera to the network.

When installing an above-the-wall assembly, breaking out one of the four openings in the base of the mount will provide for properly guiding the cable into the mount.

Connecting to the network (Ethernet)

Simply connected to the network

In order to connect to an Ethernet network, simply attach the pre-installed network cable into the wall outlet or the **extension's** connector.

Continue by mounting the wall mount at the camera location, as described in section 2.5.4, *Finishing the Installation*.

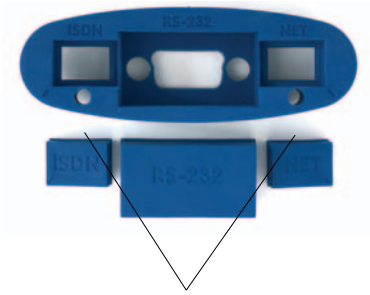
Never insert the pre-installed cable into an ISDN wall outlet! In order to **attach to an ISDN network**, continue as described under *Connecting to ISDN* in this section.

Spider protection of the camera

Spider protection pre-installed in Secure models

MOBOTIX cameras of the Secure models feature a pre-installed **spider protection (item 13)**, which effectively prevents small animals from entering the camera.

Make sure that the **condensation drain holes** remain open. These openings contain semi-permeable membranes, which allow condensation to exit the camera housing, but also prevent small animals from entering the camera.

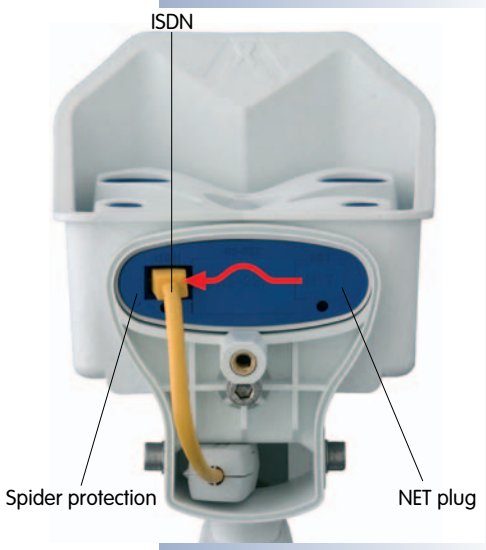


Drain holes with membranes for exit of condensation water

Never push any objects into the drain holes as this may damage the membranes!

Connecting to ISDN only

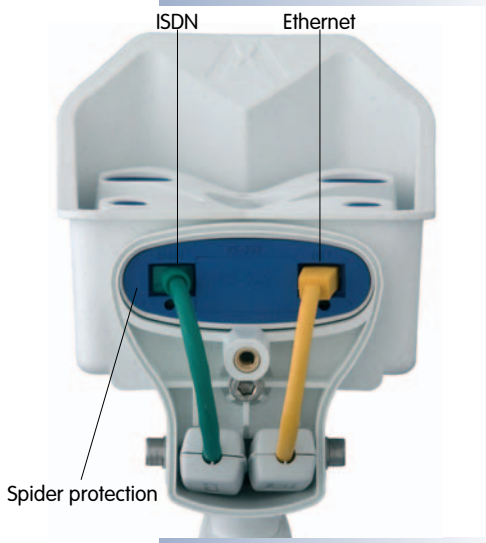
In order to connect to ISDN only, it is necessary to open the bottom cover of the SecureFlex wall mount, to remove the spider protection and to move the pre-installed network cable to the ISDN connector of the MOBOTIX camera.



- Unscrew the Allen screw of the **bottom cover** using the supplied 5 mm Allen wrench and remove the bottom cover, including the Allen screw and the washer.
- Remove the remaining rubber plugs from the spider protection (**RS232**, **ISDN**) and gently pull the spider protection out of the camera without damaging the membranes in the condensation drain holes.
- Remove the cable from the **10BaseT** connector and gently pull it out of the spider protection.
- Insert the cable into the **ISDN** opening of the spider protection, then push the cable into the **ISDN** connector of the camera.
- Gently push the spider protection into its original position, and insert the **RS232** as well as the supplied **NET** plug (item 14).
- Reseat the bottom cover and fasten the Allen screw and the washer.
- **Mark** the cable connector on the other end as **ISDN cable** to prevent confusion about the cable's function.

Connecting another cable (ISDN/RS232)

In order to connect another cable besides the Ethernet cable (ISDN/RS232), it is necessary to open the bottom cover of the SecureFlex wall mount and to install the additional cables.



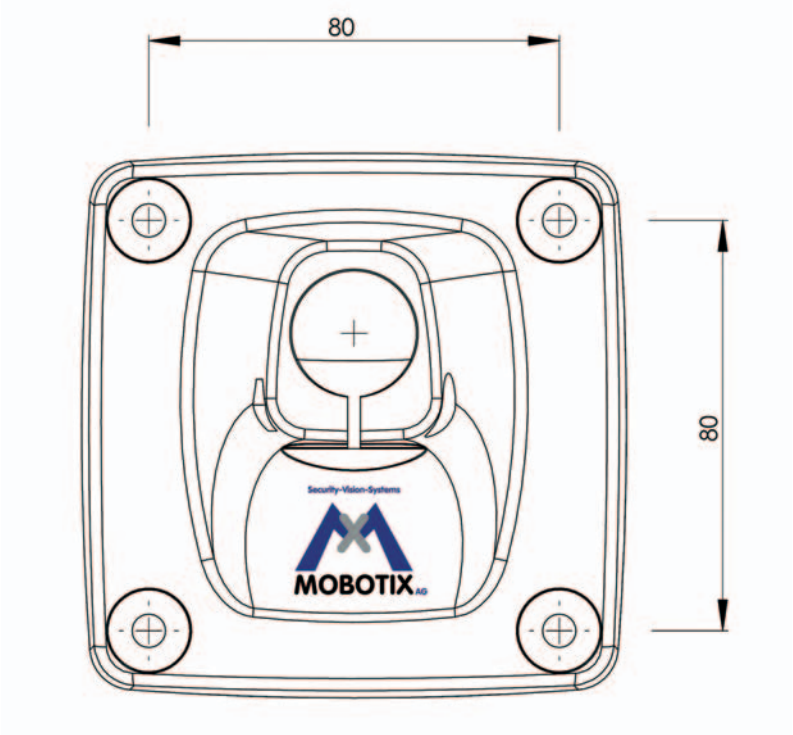
- Unscrew the Allen screw of the **bottom cover** using the supplied 5 mm Allen wrench and remove the bottom cover, including the Allen screw and the washer.
- Guide the additional cable from below through the camera holder, the turn/tilt unit and the foot to the back of the foot (depending on the position of the wall/ceiling mount, it may help to remove the cover; see also section 2.5.1, *Converting the Wall Mount to Ceiling Mount*).
- Replace the corresponding rubber plug and push the cable into the connector of the camera.
- Attach the **hinged ferrites** to the additional cable(s) you just installed, so that the ferrites are positioned besides or above the already installed ferrite of the network cable within the cable shaft (leading upwards) of the camera holder.
- Reseat the bottom cover and fasten the Allen screw and the washer.
- **Mark** the cable connector on the other end to prevent confusion about the cable's function.

2.5.4 Finishing the Installation

Mounting the camera

- Insert the supplied **cover (item 12)** into the opening of the wall mount that is not used and press it firmly into its seat.
- Copy or print the **drilling template** for the SecureFlex wall mount at the back of the manual (make sure *not to scale* the template).
- Mark the holes; when using a **wall outlet**, make sure that the outlet lines up with the upper rim of the mount so that the cable is not bent too sharply later on.
- Drill the **holes** and insert the supplied dowels.
- **Connect the cabling** and properly fasten the SecureFlex wall mount using the supplied screws and the appropriate washers.
- Establish a **connection** from your computer to the camera (see chapter 3, *Operating the Camera*) and adjust the camera position according to the **live image** delivered by the camera.
- Properly tighten the screws of the mount itself and make sure that all screws are properly fastened.

Find the folded drilling template at the end of the manual!



All measurements in mm!

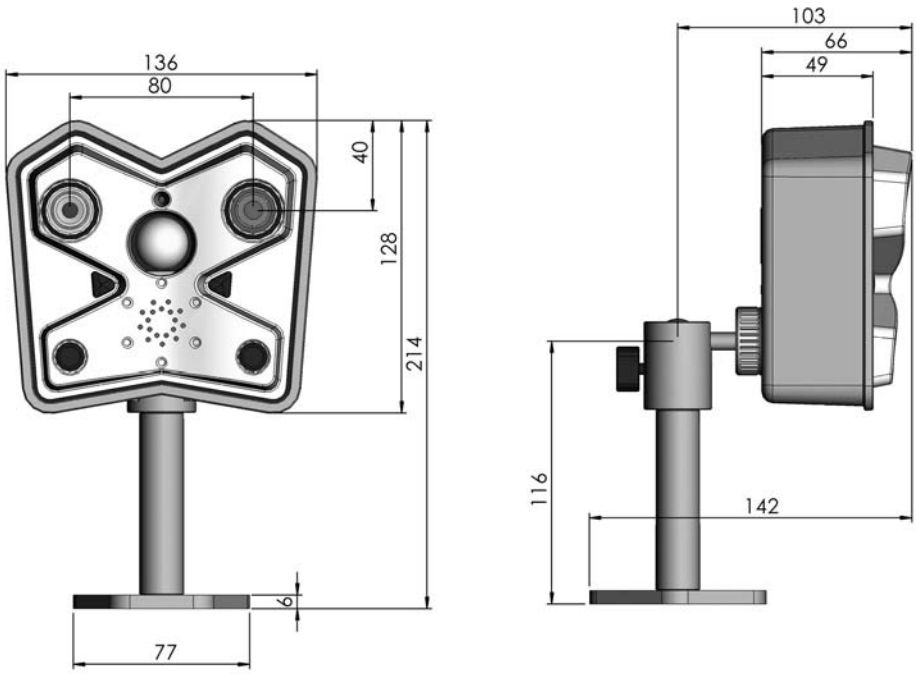
Caution

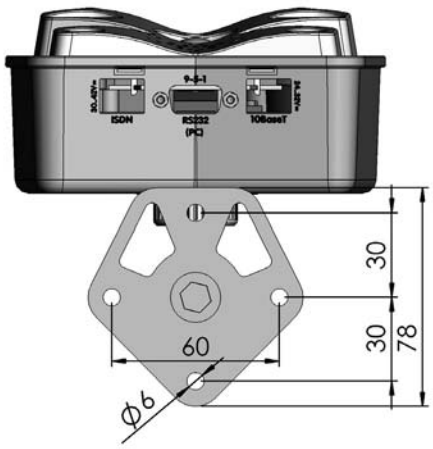
Never use screws with countersunk heads to fasten the mount, as these screws will destroy the mount.

2.6 Dimensions (Indoor Models)

The MOBOTIX M10 Indoor models are delivered with a ceiling mount and integrated ball joint. Once the ceiling mount has been attached to the camera by mounting the camera onto the screw of the ceiling mount, the camera can be mounted to a wall or a ceiling. See the following figures to find the camera measurements and how to position the holes for fixtures.

Check the appendix at the end of the manual for the drilling template, which will be helpful when drilling the holes. For more detailed information on planning, please download the **MOBOTIX Planning Aid** from **www.mobotix.com**.





All measurements in mm!

Download planning aid from www.mobotix.com

The planning aid also contains a table with image angles for the different lenses

2.7 Mounting the Indoor Models to a Wall or a Ceiling

Mount the camera onto the ceiling mount and determine the best camera position. It is important that the camera's field of view is not obstructed in any way.

Mounting the ceiling mount

Ceiling mount for mounting to ceilings or walls

- Screw the ceiling mount into the thread at the back of the housing of the MOBOTIX camera.
- The integrated ball joint allows a wide range of camera positions.

Mounting the camera to a wall or ceiling

The camera software can rotate the image!

- Once the holes for fixtures have been drilled, you can attach the mount to the ceiling.
- The mounted camera's position can be easily fine-tuned using the integrated ball joint.
- Make sure you properly tighten the fixation screw to lock the ball joint in place once you have properly positioned the camera.

Mounting the hinged ferrites

- Install hinged ferrites to all cables leading to the camera that do not have a hinged ferrite installed.

Caution

If the camera has been mounted upside-down, the camera's images will also be upside-down. The MOBOTIX camera allows rotating/mirroring the image (**Setup Menu > General Image Settings > Mirror & Rotate Image**)

2.8 Adjusting the Tele Lens Focus (Cameras With Tele Lens Only)

Once the camera has been mounted, the tele lens should be checked for proper sharpness and should be adjusted, if required. Make sure that you have the supplied **adjustment ring** ready for this purpose.

- Position the adjustment ring (item 8) on the tele lens.
- The two prongs fit exactly into the notches of the lens' rim!
- Cautiously turn the lens in clockwise or counter-clockwise direction until the image is properly focused.
- Make sure that you see the camera's live image on your monitor for this purpose.

Tele lenses are focused using the supplied adjustment ring

Note

How to differentiate between the wide-angle and the tele lenses:
The **wide-angle** lens is mounted behind a glass pane and cannot be adjusted from the outside.

The **tele** lens is protruding from the camera front. It can be removed and adjusted using the supplied adjustment ring.

2.9 Camera Accessories for Mounting (Outdoor Models)

In order to give you more freedom when mounting the **MOBOTIX Outdoor models**, MOBOTIX offers a stainless steel outdoor wall mount with turning joint, a stainless steel wall mount and the SecureFlex wall mount as accessories.

Stainless Steel Outdoor Wall Mount With Turning Joint (MX-DWM-Set)

This robust accessory for the ball joint mount can be turned sideways to the left or to the right to compensate for a camera that has been mounted pointing downwards.

Stainless Steel Universal Outdoor Stand/Wall Mount (MX-SWM-Set)

The MOBOTIX stainless steel universal mount can be used as desk stand or wall mount, or it can be mounted on a tripod. Thanks to its curved slots, camera tilt can be precisely adjusted. The universal mount has a width of 100 mm (3.9"), leg lengths of 130 mm (5.1") and is 3 mm (1/8") strong.

Stainless steel mount used as desk stand

SecureFlex Wall Mount for Outdoor Models*

The **SecureFlex wall mount** provides for easy mounting of the Outdoor models to a wall or a ceiling and also allows pointing the camera in virtually any direction. The concealed cabling improves security and fully covers wall outlets.

(* Standard accessory of all Secure Outdoor models; available as optional accessory for all other Outdoor models)

2.10 Wiring, Fire Prevention, Lightning and Surge Protection

When installing the wiring inside or outside of buildings, make sure you always adhere to the relevant regulations on wiring, fire prevention and protection against lightning.

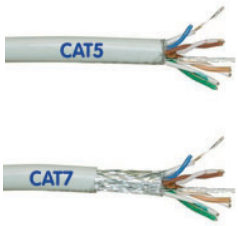
MOBOTIX recommends having MOBOTIX cameras installed only by specialists accustomed to installing network devices and having proper respect for the pertinent regulations regarding lightning protection and **fire prevention** as well as the current technology for preventing damages from electrical surges.

Find more information at an institution such as the **International Electrotechnical Commission** (IEC, **www.iec.ch**) or at a manufacturer of protection devices against lightning and electrical surges, such as Dehn (**www.dehn.de**).

2.10.1 Wiring

When installing the wiring, make sure you follow these guidelines:

Use double-shielded CAT 5/7 cables for wiring



- **Data cable:** Make sure you only use double-shielded CAT 5/7 cable (**S/STP**) for Ethernet connections. If the power is supplied on a data cable using the Network Power Adapter or similar means, the same applies to the ISDN cable (see section 3.3, *Connecting the Camera*).
- **Outdoors:** Installing the camera outdoors requires special precautions and measures regarding the cables as well as lightning and surge protection (see section 2.10.3, *Lightning and Surge Protection*).
- **Wire lengths:** The cable segments must not exceed the maximum allowed cable lengths in order to ensure proper data transfer (see section 3.3, *Connecting the Camera*).
- **Avoid induction:** When running data cables parallel to existing regular power lines or high-voltage wires, make sure you observe the minimum distances to the power cables.

2.10.2 Fire Prevention

When installing the power lines to the camera, make sure you always adhere to the relevant regulations on wiring and fire prevention at the site of the installation.

2.10.3 Lightning and Surge Protection

To prevent damage from lightnings and surges, make sure you follow these guidelines:

- **Lightning conductors:** In areas exposed to lightning (e.g. on roofs), a distance holder (1 m/3 ft. higher, 1 m/3 ft. away from the camera) and proper lightning conductors need to be installed in order to prevent lightning strikes into the camera and to ensure that the energy of a lightning strike is properly led to the ground.

- **Surge protection:** Make sure you have installed proper protection against electrical surges in order to prevent damage to the camera, the building and the network infrastructure. This includes surge protectors for 19" racks, adding an uninterruptible power supply (UPS) to the MOBOTIX camera, and installing surge arresters or similar for routers, switches, servers, etc.

3 OPERATING THE CAMERA

3.1 General Remarks on Operating the Camera

The MOBOTIX camera **does not require any software installation**; all you need is your preferred browser with JavaScript support to operate the camera. Thus, the MOBOTIX camera is supported by all common operating systems (such as **Windows**, **Macintosh** and **Linux, ...**).

3.1.1 Establishing the Power Supply of the Camera

You can choose between the following options:

One ISDN NT can power only one camera

Netpower for 4, 8 or 20 cameras

- **External power supply and Network Power Adapter (NPA, Power over Ethernet)***: Power is supplied via the Ethernet cable using the NPA (recommended, max. length 100 m/110 yd).
- **ISDN cable**: If the ISDN NT (network termination device) is also supplying power (connect power supply of NT to power outlet).
- **Network cable (power over Ethernet)**: When using the **MOBOTIX 19" Netpower*** unit to supply power via the network cable.

*Accessory, not included in delivery!

3.1.2 Setting the Connection Method

The camera has been set at the factory to support the following connection methods:

In the RAS box (computer):
- Camera phone number
- User: linux
- Password: tux

- **ISDN interface of the camera:** From a computer with ISDN card using a RAS connection (linux/tux), launch a browser and enter the IP address printed on the camera label (e.g. **10.1.0.99**).
- **Ethernet interface of the camera** (10 Mbps Ethernet): Directly from a computer (using a crossover cable) or from a Network Power Adapter or a switch using a regular patch cable, launch a browser and enter the IP address printed on the camera label (e.g. **10.1.0.99**).

If your network does not support a Class A network (i.e. **10.x.x.x**), your PC or laptop will have to be set temporarily to such a network address. For operating systems that allow multi-homing (Windows 2000, Windows XP, Linux, Mac OS X), you can set a second IP address in the **10.x.x.x** network.

Computer settings:
- IP address: 10.1.0.11
- Netmask: 255.0.0.0
- Gateway: none
- DNS: none

Once a connection has been established, click on the **Admin Menu** button to start configuring the camera. The **Admin Menu** controls all network settings (IP address, netmask, DHCP, etc.), ISDN behavior and other options.

Note

After first booting the new MOBOTIX camera or after resetting to factory defaults, accessing the Administration menu (**Admin Menu** button) will automatically start the **Quick Installation** wizard. This is where you configure the most important camera parameters in a step-by-step manner. If you have completed the Quick Installation wizard at least once, the standard Administration menu will open when you click on the **Admin Menu** button.

Always use Quick Installation for initial configuration

The configuration follows these five general steps:

a) Establish the first connection (via ISDN or network).
b) Set the parameters for the desired connection type (network/ISDN) using the **Quick Installation**.
c) Set the event control (events, actions and messages); see chapter 7, *Events, Actions and Messages*.
d) Set the storage parameters (FTP or external ring buffer storage).
e) Store the configuration in the camera's permanent storage (flash) for rebooting.

Live image: http://preparkcam.mobotixserver.de

3.2 Overview of the Configuration Settings

Always use Quick Installation for initial configuration!

- **Using the Quick Installation wizard**

  After first booting the camera or after resetting it to factory defaults, any access to the administration menu (**Admin Menu** button) will start the **Quick Installation**.

  This wizard will guide you through the most important settings (configuration of the network and ISDN interfaces, etc.) of the camera and can also be used to reset the camera to its factory settings.

  It is recommended to use **Admin Menu > Quick Installation** later on as well, e.g. if you would like to change or add connection methods.

Admin Menu

User: admin
Password: meinsm

- **Administration and setup of the camera**

  Basic configuration tasks of the camera (e.g. passwords, interfaces, software updates) are carried out from the administration menu (**Admin Menu** button), which requires the corresponding access rights (*admins* group).

Setup Menu

  Open the **Setup Menu** (button) and find the dialogs for changing the image, event and recording settings in the **Image Control** and **Event Control** sections. These options are also available for users belonging to the *users* group.

  Some of these settings can be changed using the corresponding pull-down menus above the image on the Live screen.

Recommendation:
Always use factory image settings!

- **The image settings are already optimized**

  The factory image settings of the MOBOTIX camera deliver excellent images for most of the application scenarios and should not be changed; if changes are necessary, the adjustments should be minimal. If you would like to reset changes without resetting the complete configuration to factory defaults, you can use the **Factory** button at the bottom of the dialog to reset only this dialog's settings. If you would like to reset all image settings, you may do so using the **Manage Settings > Restore Image Settings** pull-down menu above the image on the Live screen.

- **All changes are temporary**

  All changes to the configuration are only temporary and can thus be tested easily. Restoring the old configuration settings can be achieved using the **Restore** button in most dialogs or by running **Admin Menu > Restore last stored configuration from flash** (see also section 5.9, *Managing Settings*).

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 (clicking on **Set** at the bottom of each dialog will temporarily set the changes; clicking on **Close** will ask you to store the complete configuration in the camera's permanent memory) or in the **Configuration** section of the administration 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 additional information on this topic, see chapter 5, *Basic Camera Configuration*.

Store configuration permanently:

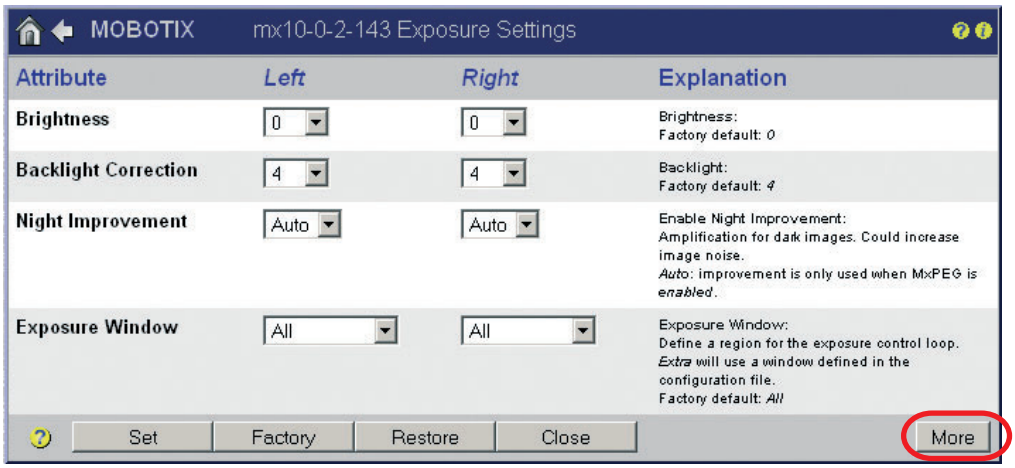
- Using the Set and Close buttons
- Admin Menu > Store current configuration into flash memory

- **A camera that keeps time**

  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 keep the camera in synch manually with a computer or fully automatic using a time server. The camera can use NTP time servers or time servers providing Time Protocol (RFC 868).

- **The MOBOTIX camera can do "More"**

  In order to provide a better overview, some of the camera dialogs hide less-often used options when showing the dialog. These dialogs have a **More** button in the bottom right corner; click on it to display the advanced options. If all options are displayed, the **Less** button appears. Clicking this button will hide the advanced options.



Click on the More/Less buttons to show/hide the advanced options

3.3 Connecting the Camera

Use the 19" MOBOTIX Netpower rack-mount unit to supply power to 8 or 20 cameras (MX-NPR-8 or 20)

Note

To connect the MOBOTIX camera, hook up the Ethernet or the ISDN cable to the corresponding connector in the camera housing. Connect the power supply to the free connector.

The following sections contain more detailed descriptions and descriptions of special cases.

3.3.1 ISDN Only

Maximum Cable Lengths (ISDN)

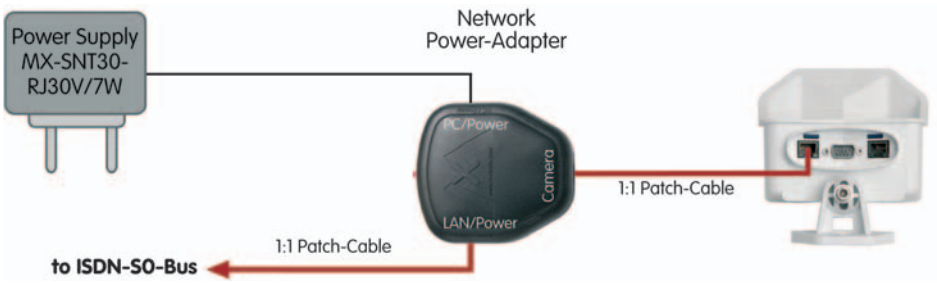
Connection to **ISDN outlet**: max. **5-10 m (16 to 33 ft.)**
Connection to **NT (without termination resistors)**: max. **5-10 m (16 to 33 ft.)**
Connection to **NT (with termination resistors)**: **120 m (130 yd)**

Use the MOBOTIX MX-NPR-4 for smaller installations

With Network Power Adapter*

(1) Connect the **Camera** connector of the Network Power Adapter (NPA) to the **ISDN** connector of the camera.
(2) Connect the **LAN/Power** connector of the NPA to the ISDN S0 bus/NT.
(3) Plug the RJ45 connector of the external power unit into the **PC/Power** connector of the NPA.

*Accessory, not included in delivery!

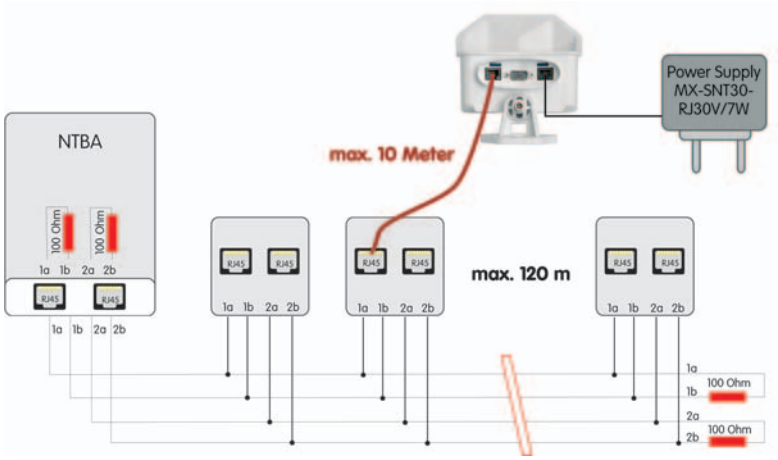


Requires an ISDN interface card in the PC

Dial-up from an ISDN LAN router can also be set up; contact your network administrator for details

Without Network Power Adapter

1) Connect the **ISDN** connector of the camera to the S0 bus/NT.
2a) **Power supply using the ISDN S0 bus:** Connect the NT's power supply in order to provide power to the camera via the ISDN cabling (a separate power supply is not required). If other ISDN devices are also powered via the ISDN S0 bus, you should use the external power supply for the camera.
2b) **Power supply using the external power supply:** Plug the RJ45 connector of the external power unit into the **10BaseT** connector of the camera.



Maximum of 12 wall outlets, with up to 8 devices attached

ISDN is a bus system, which requires termination (100 Ohms) at both ends

3.3.2 Ethernet Only

Maximum Cable Lengths (Ethernet)
Data/power connection: max. **100 m (110 yards)**

Make sure that you only use switches or routers that support the **10 Mbps Ethernet interface** of the camera and check the LED activity of the corresponding port of the switch or router. We recommend using a switch. For additional information on this topic, see section 4.11, *Operating Many Cameras*.

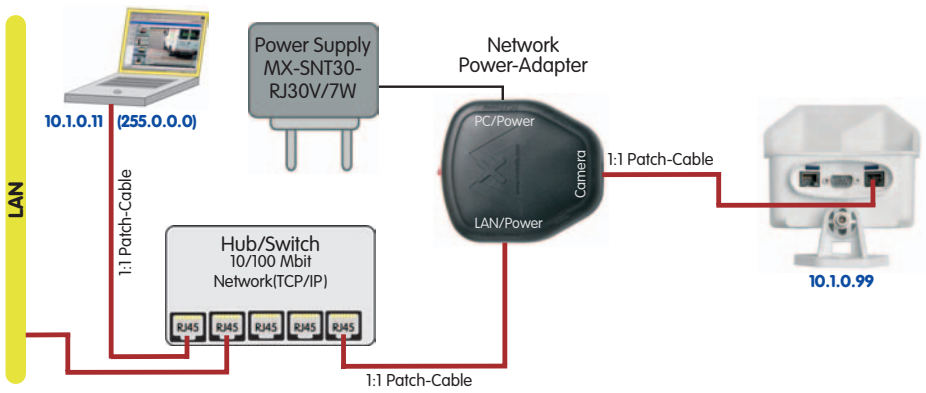
Use a switch, if possible

With Network Power Adapter

(1) Connect the **Camera** connector of the Network Power Adapter (NPA) to the **10BaseT** connector of the camera.

2a) **Connecting to an Ethernet switch or router:**

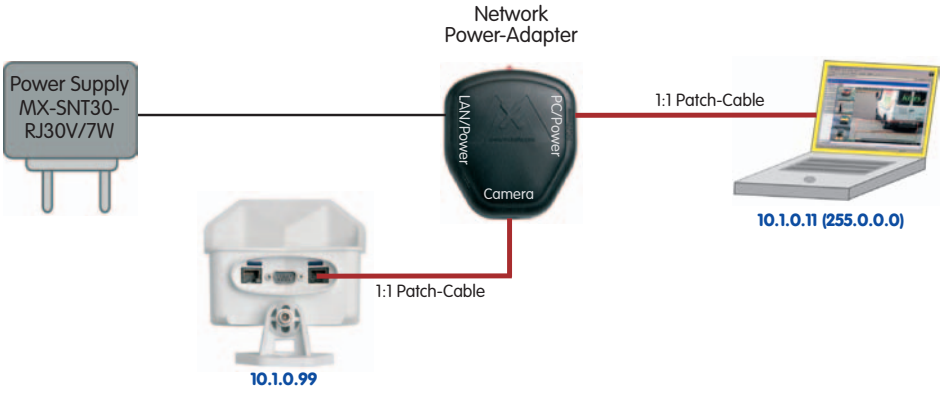
- Connect the **LAN/Power** connector of the NPA to an Ethernet connector of the switch/router or the Ethernet wall outlet.
- Plug the RJ45 connector of the external power unit into the **PC/Power** connector of the NPA.



The Network Power Adapter replaces the crossover cable when directly connecting to a computer

2b) **Connecting directly to a computer:**

- Connect the **PC/Power** connector of the NPA to the Ethernet port of the computer.
- Plug the RJ45 connector of the external power unit into the **LAN/Power** connector of the NPA.



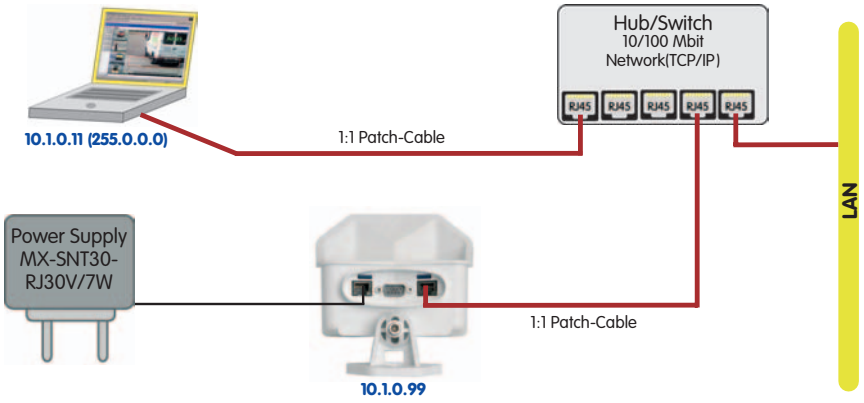
Without Network Power Adapter

(1) Connect the data link:

2a) **Connecting to an Ethernet switch or router:**

- Connect the **10BaseT** connector of the camera to the Ethernet connector of the switch/router or the Ethernet wall outlet.

Only a switch will guarantee maximum network performance



2b) **Connecting directly to a computer:**

- Use a **cross-over cable** to connect the **10BaseT** connector of the camera to the Ethernet port of the computer.

You may use a simple patch cable if the computer's network interface supports auto-sensing and automatically recognizes the direct connection

3.3.3 ISDN and Ethernet

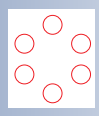
In order to use ISDN and Ethernet **simultaneously**, plug the ISDN and Ethernet cables into the corresponding connectors of the camera. Power is supplied using either the ISDN cable (from the NT device) or the Ethernet cable and the **Network Power Adapter** (Power over Ethernet).

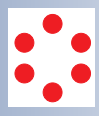
Caution

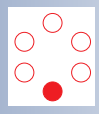
Missing termination resistors and wrong cable lengths are the most common installation errors!
Always observe the instructions regarding maximum cable lengths and proper ISDN termination!

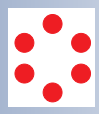
3.3.4 Camera Startup Sequence

As soon as the camera's power supply has been established, the six LEDs will show the progress of the starting sequence:


2 sec. Reset


Hardware Test


Unpacking OS


Starting OS


Ready

- **Hardware test**: Two seconds after the power has been connected, all LEDs will light up for one second. The camera's computer (boot loader) checks the camera hardware.
- **Unpacking the OS**: The boot loader unpacks the operating system from the Flash EPROM and copies it to the camera's memory (the lower LED lights up for about 4 seconds).
- **Starting the OS**: The Linux operating system unpacks its data to the ramdisk and initializes the system. All operating system components are verified against their checksums in order to detect changes. **In case of an error**, the camera will start using the backup operating system instead.
- **Starting the applications**: Once the application software has been started, the LEDs in the middle will blink (if they have not been switched off for this configuration). You can now access the camera using your browser.

Note

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

3.4 The First Image from the Camera

Once the ISDN connection (see section 3.4.1, *Preparing the ISDN Connection*) or the Ethernet connection has been established (see section 3.4.2, *Preparing the Ethernet Connection*), you have the following possibilities to get the first image from the camera:

A JavaScript-enabled browser is all you need to access the camera user interface!

- **Direct access using a browser** (section 3.4.4, *The First Image in the Browser*)
- **Display the camera using MxViewer** (free Windows client for MOBOTIX cameras; section 3.4.7, *The First Image in MxViewer*)

Open the browser-based user interface of the camera to complete the remaining configuration tasks (see section 4.3, *The Live Screen in the Browser*, in the *Software Manual*).

3.4.1 Preparing the ISDN Connection

Your computer has to have a properly configured ISDN card to establish a connection. If your network has an ISDN router, contact your network administrator for more information.

Assign different MSNs (phone numbers) to the cameras if they are on the same S0 bus

(1) Create a new Point-to-Point connection (PPP) on your computer.
(2) Enter `linux` as user name and `tux` as password.
(3) Enter the phone number (a free MSN) of the ISDN port to which you connected the camera. If your computer is connected to an internal telephone system, make sure that you enter the prefix that is required to obtain an outside line.

    The MOBOTIX camera can **automatically determine the MSN** (see section 5.2.2, *Quick Installation Pages in Detail*).
(4) Establish the connection.

By factory default, the camera will react to every MSN of an ISDN port (you may change this in **Admin Menu > ISDN Connections**).

Note

Default ISDN access credentials for RAS connections
User name: `linux`
Password: `tux`

3.4.2 Preparing the Ethernet Connection

For this example, we will use a camera with the factory IP address **10.1.0.99**. **Replace this IP address with the IP address of your camera**. You will find this address on a **small sticker on the camera**. Accessing the camera is always the same and is independent of the connection type: simply enter the camera's IP address in the address field of the browser (see section 3.4.2, *The First Image in the Browser*).

Caution:
Netmask 255.0.0.0

Note

Pressing the **"R" key** on the back of the camera will let the camera **announce the current IP address of the camera using its voice output feature.**

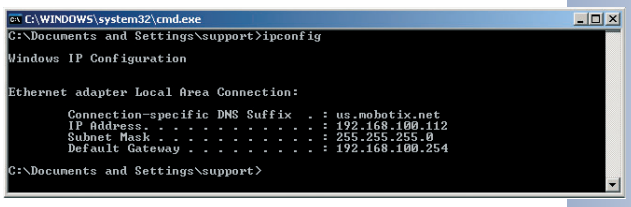
Your computer has to have a network or a wireless interface, and it should be in the same subnet as the camera. If your network also uses IP addresses of a class A network (e.g. **10.x.x.x**, network mask **255.0.0.0**), you should be able to access the camera directly (provided no other network device uses the same IP address).

Open a Command Prompt (Windows):
Start > Run, enter "cmd", then press [Return]

Determine the IP address of your computer:

- Open a command shell (Windows) or a terminal (Linux/UNIX/OS X) and enter the following command:

  Windows 2000/XP: **ipconfig**
  Linux/UNIX/OS X: **ifconfig**



Make sure that you replace 10.1.0.99 with the IP address of your camera!

You will find the IP address of your Windows computer under **IP address**; for Linux/UNIX/OS X computers, search for the **inet address** parameter of the **eth0** device (the first network interface). If your computer does not use an IP address in the 10.x.x.x range, you should change or expand the network configuration of your computer (see below).

Make sure that no other network device uses the camera's IP address:

The factory IP address is printed on the sticker on the camera

Example: 10.1.0.99

- Open a command shell (Windows) or a terminal (Linux/UNIX/OS X) and enter the following command:
  ping <factory IP address>

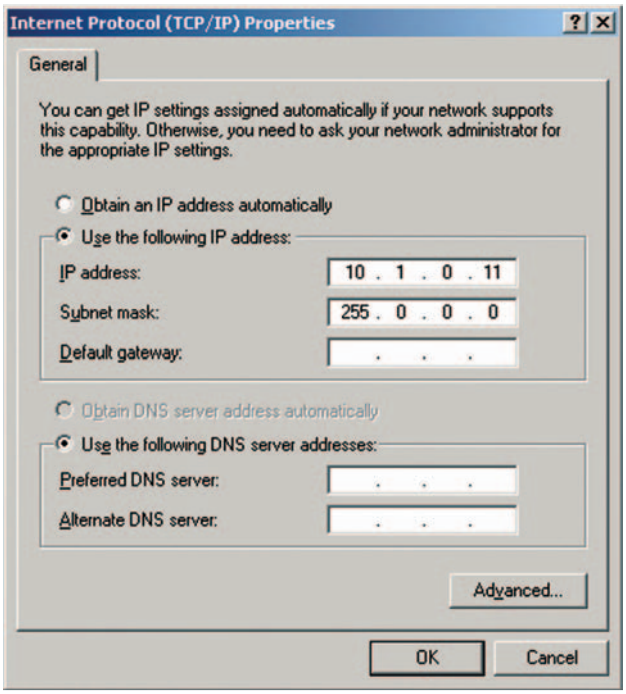
If you receive an answer from another network device although the camera is not connected, you will have to remove that device until you have reset the MOBOTIX camera to a free IP address. We recommend using the Quick Installation wizard for this task.

Set up second IP address on Windows computers

If your computer does not use an IP address in the 10.0.0.0 network (e.g. a 192.168.x.x or 172.x.x.x network), you should add a second IP address to the network configuration of your computer or set a new IP address:

Windows 2000/XP

(1) Open the **Network Connections** and open the **Properties of LAN Connection**.
(2) Double-click **Internet Protocol (TCP/IP)**.
(3) Click on the **Alternative Configuration** tab.
(4) Enter an IP address (e.g. `10.1.0.11`) in the class A network (10.x.x.x) that is unique in your network and that is not the same as the camera's IP address.
(5) Close all dialogs by clicking on **OK**.



Set up second IP address on Linux/UNIX/OS X computers

Linux/UNIX/OS X

(1) Open a terminal as `root` user and enter the following command:
`ifconfig eth0:1 10.1.0.11`

The computer now has the additional IP address `10.1.0.11`, allowing it to access the camera with its factory IP address in the 10.x.x.x network (`10.1.0.99` in this example).

3.4.3 Simultaneously Using ISDN and Ethernet Connections (Gateway)

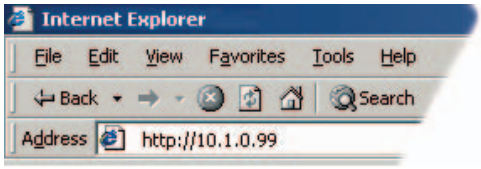
In most cases, the MOBOTIX camera will be used either on the ISDN or an Ethernet LAN, not both. If ISDN is used, the gateway (for accessing computers outside of the local network) is set automatically; for Ethernet, the gateway has to be set manually.

In order for the camera to open an ISDN dial-out connection while both ISDN and Ethernet are used, the **default route** has to be set to the preferred ISDN dial-out connection (**Admin Menu > ISDN Data Connections > Dial-Out Connections**). Section 5.2, *Quick Installation*, in the *Software Manual* contains more information on this topic.

Routing allows reaching different network addresses using different connection types/routes

If you would like to use connections to different networks for other tasks (e.g. backup to an FTP server), you can set more network routes in **Admin Menu > Routing**. See the **Routing** topic in the camera help for more information.

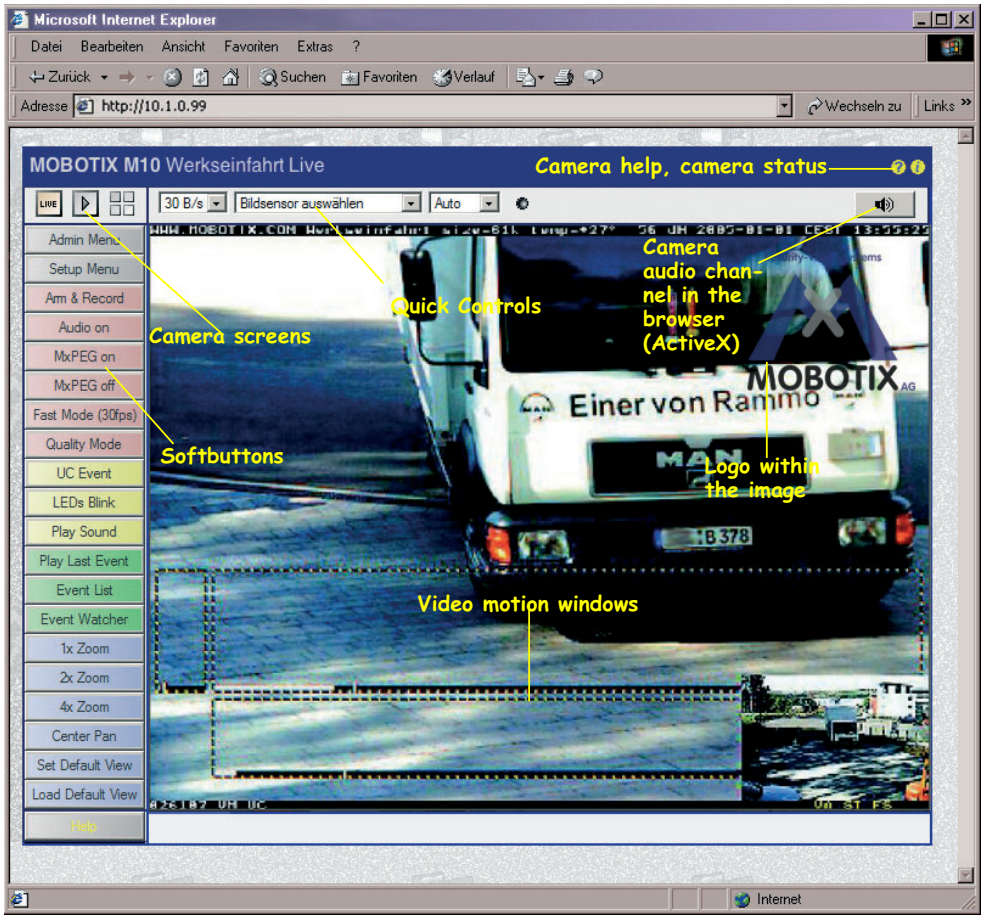
3.4.4 The First Image in the Browser



As you have successfully started the camera for the first time, you can now access the camera using your preferred browser to see the live video stream and the user interface. Internet Explorer, Mozilla, Firefox, Safari or any other graphical browser with activated JavaScript is suitable. The operating system is of no importance, even PDAs can be used without any problems.

Camera access: http://10.1.0.99 (example IP)

The factory IP address is printed on the sticker on the camera



Administration menu:
User name: admin
Password: meinsm

Softbuttons are freely configurable

After entering the camera's IP address in the browser address bar (e.g. **http://10.1.0.99**), you will see the Live screen 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 above and below the live image.

Replace 10.1.0.99 sample address by the IP address of your own camera!

Note

Credentials for accessing the Administration Menu

User name: **admin**

Password: **meinsm**

Changing the factory IP address: Always use Admin Menu > Quick Installation

IP voice announcement is not available for **Web** and **Basic** models

Notes

Factory Defaults: Every MOBOTIX camera has its individual factory IP address (e.g. **10.1.0.99**). You will find this address on a small sticker on the camera housing. If you have started the camera using DHCP or you have set the IP address manually, use the new IP address (e.g. **192.168.0.99**) instead of the factory IP address. Pressing the **"R" key** on the back of the camera will prompt the camera to announce its current IP address. For additional information on this topic, see section 3.5, *Starting the Camera With an Automatic IP Address (DHCP)*.

Troubleshooting: If your web browser does not show the camera's Live screen after you have entered the IP address, you should try to locate and resolve the error as described in chapter 12, *Troubleshooting*, in the *Software Manual*.

MxViewer: In order to see the live image of the camera, you can also use other applications or the integrated programming interface of the MOBOTIX camera. **MxViewer** for Windows is such an application and is provided **free of charge** by MOBOTIX. Besides its ability to display fast live video of up to **30 cameras with 30 fps** each on one PC, MxViewer also allows recording and playing back video clips with realtime audio via the network and can control pan/tilt heads using a joystick or the mouse. Download the newest version of MxViewer from the MOBOTIX website. The website contains more information on MOBOTIX systems as well as the MxViewer help.

3.4.5 Additional Information

Camera Help

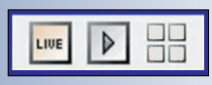
Camera Information

For more information on this topic, see the **News** and **Functional Overview** pages in the online help of the camera's browser interface. Click on the yellow icon in the top right corner to open the camera's online help.

In order to get more information on the camera and its current configuration, open the **Camera Status** dialog by clicking on the yellow icon in the top right corner of the camera's browser interface.

Another source of information on all dialogs and parameters of the MOBOTIX camera is the **Reference Manual** that you can download from **www.mobotix.com**. The Reference Manual consists of the MOBOTIX camera's online help in one PDF file.

3.4.6 Camera Screens in the Browser



By factory default, the MOBOTIX camera first shows the **Live** screen. You can set a different entry page in order to prevent others from changing settings; you can assign user names and passwords to prevent unauthorized access or you can restrict access to the current live image only, by setting the **Guest** screen as entry page.

Use the Administration menu to set the camera screen that should appear initially when accessing the camera IP address

The following screens are available:

- **Guest** screen: Only shows the current live image with reduced frame rate (see section 4.7, *Guest Screen*, in the *Software Manual*).
- **Live** screen: Shows the current live image and allows changing the image and event settings of the camera (see section 4.3, *The Live Screen in the Browser*, in the *Software Manual*).
- **Playback** screen: Shows all recorded images or video clips with extended functions for searching and downloading images, regardless of where the images are stored (in the internal or the external ring buffer on a file server or PC; see section 4.4, *The Playback Screen in the Browser*, in the *Software Manual*).
- **MultiView** screen: Shows multiple cameras or the last events in a freely definable layout (see section 4.5, *The MultiView Screen in the Browser*, in the *Software Manual*).
- **PDA** screen and **PDA Event List**: Both screens are optimized for PDAs with a focus on fast data transmission with low bandwidth requirements (GSM, GPRS) on devices with small displays (PDAs, mobile phones, sub notebooks). The **PDA Event List** in particular gives a quick overview over the last events since the live image is not transferred (see section 4.6, *The PDA Screen*, in the *Software Manual*).

http://10.1.0.99/pda opens the PDA screen

Note

Open **Admin Menu > Language and Entry Page** to set a different start page when accessing the camera.

Open **Admin Menu > Users and Passwords** and **Admin Menu > Group Access Control Lists** to set user rights and to prevent unauthorized access to certain screens (see section 5.4.1, *Passwords*, in the *Software Manual*).

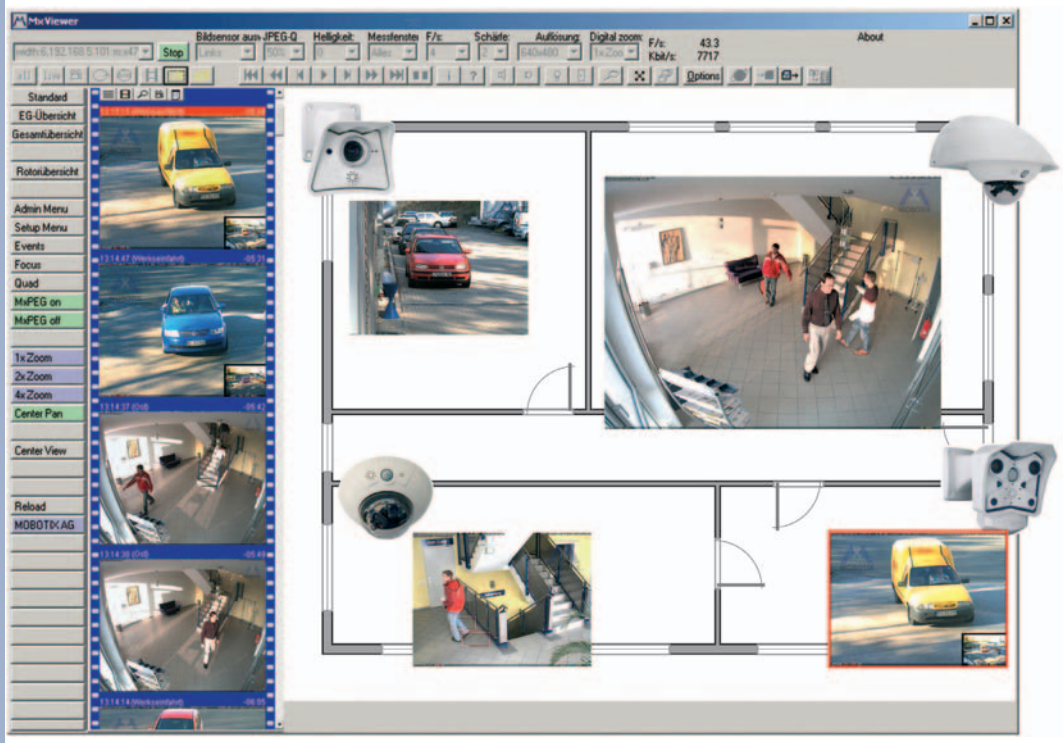
For more information on camera screens, see the **online help** of the camera's browser interface. Click on the yellow icon in the top right corner of the **Live** screen to open the corresponding page of the online help.

Live/Playback/MultiView: Click on to open the online help pages for the camera screens

3.4.7 The First Image in MxViewer

Download MxViewer free of charge from www.mobotix.com

The **MOBOTIX MxViewer** is a free Windows application that allows displaying **multiple MOBOTIX cameras** on one computer and provides alarm management functions. It can easily handle displaying **30 cameras with CIF resolution** at **30 fps each** in **MxPEG** format on one standard PC with Intel Pentium 4 and 3 GHz.



MxViewer Windows client with alarm list, background image and freely positioned cameras

MxViewer can do quite a bit more than simply display the video and audio data from MOBOTIX cameras. The unique features of MxViewer and the MOBOTIX cameras create a full-featured security system: Intelligent alarm handling, extensive possibilities of arranging the cameras on layouts (MultiView screens), ability to display cameras that are sending alarm notifications, and integrated camera management functions.

Further Information on MxViewer

For further information on **MxViewer**, download the *MxViewer User Manual* from **www.mobotix.com**:

- Saving and loading MxPEG video clips
- Creating and editing layouts using the Layout Editor

Further Information in the *Software Manual*

- Section 4.3.5: *JPEG, MxPEG and Audio*
- Section 4.3.6: *Background Information on JPEG, MxPEG and Audio*
- Section 4.10: *Fast Video Streaming*

Note

Use MxViewer's **Layout Editor** to design the layout of the camera display on the screen (number of cameras, arrangement, size). The editor supports drag&drop, MxPEG clips, and allows using building or property plans and similar graphics as a background image.

The Layout Editor of MxViewer offers wide-ranging possibilities for creating different layouts

Installing and Starting MxViewer

Follow these steps to install MxViewer:

- Download the newest version of MxViewer:
  `http://www.mobotix.com/services/software_downloads/`
- Download the **`MSI`** file (Windows Installer file) and install MxViewer.

Download MxViewer free of charge from www.mobotix.com

As an alternative, you can also download the **`EXE`** file on its own; you will have to manually install MxViewer:

- Download the **`EXE`** file to a suitable folder.
- Create a shortcut by right-clicking on **`MxViewer.exe`** in this folder.
- Copy the shortcut to the desktop.

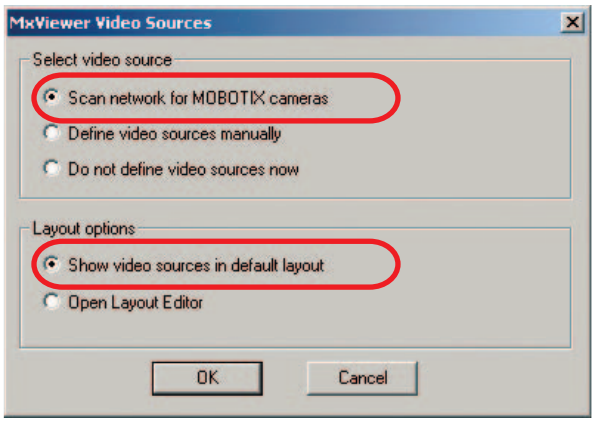
Double-click the shortcut or the program file itself to start MxViewer.

Defining Video Sources

If you start MxViewer for the first time on a computer without having defined any video sources before, the **MxViewer Video Sources** dialog will appear.

Defining cameras as video sources

Depending on the task at hand, select the appropriate option in the **Select video source** group:



You should **always** scan the network for MOBOTIX cameras!

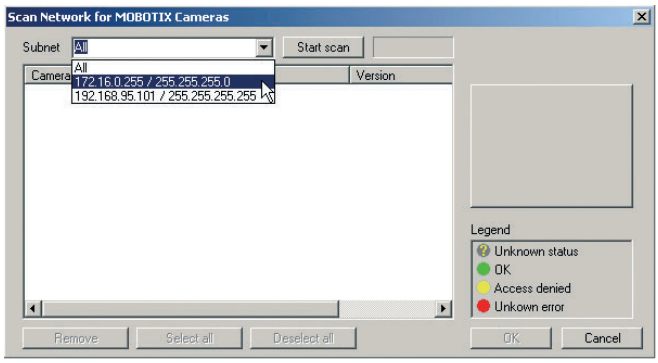
- **Scan network for MOBOTIX cameras** (default): Click on **OK** to open the **Scan Network for MOBOTIX Cameras** dialog. MxViewer will automatically scan the subnet for MOBOTIX cameras and will display the list of camera IP addresses.
- **Define video sources manually**: Click on **OK** to open the **Define Video Sources Manually** dialog and manually add the cameras.

In the **Layout options** group, select **Show video sources in default layout**. This will prompt MxViewer to automatically generate a standard layout that comprises all video sources (i.e. cameras) once they have been defined either automatically or manually.

Automatically Searching MOBOTIX Cameras in the Same Subnet

MxViewer displays the **Scan network for MOBOTIX cameras** dialog:

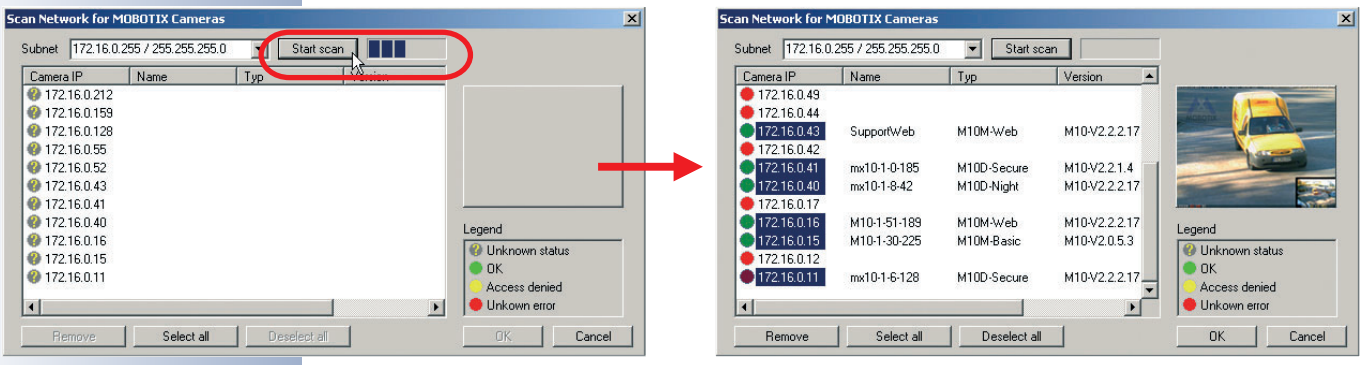
- Click on the **Subnet** dropdown list and select the desired subnet.
- Click on **Scan** to start the camera search.



If MxViewer finds only one subnet, the scanning process will start automatically.

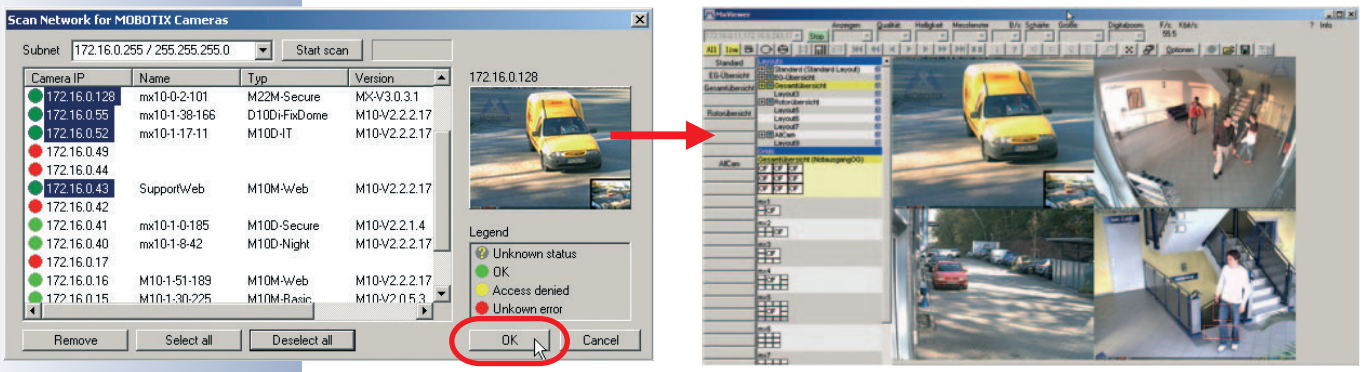
In the first pass, MxViewer searches the selected subnet for MOBOTIX cameras and in the second pass, MxViewer verifies if it can access the cameras.

MxViewer then highlights all cameras in the list, which have a status of *OK* or *Access denied*:



Using the Highlighted Cameras

Click on **OK** to use the *highlighted* cameras and to include them in the default layout generated by MxViewer:



Automatically Searching MOBOTIX Cameras in all Subnets

Enhanced search features

Future versions of MxViewer will be able to search MOBOTIX cameras not only in the current subnet of the computer, but also in all subnets, which can be reached within the same physical network (e.g. not closed off by routers or other mechanisms).

This means that MxViewer can find cameras with factory IP address (e.g. `10.1.0.99` as in our sample), although the computer is in a different subnet (e.g. `172.16.0.0`).

MxViewer can thus find MOBOTIX cameras automatically and without changing the computer configuration if the camera has been plugged into the same switch as the computer, for example.

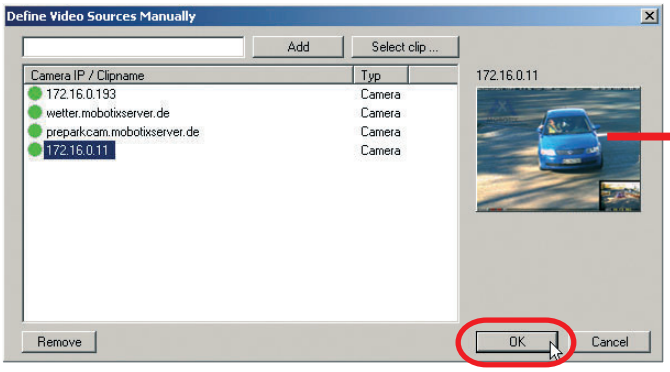
Manually Defining MOBOTIX Cameras

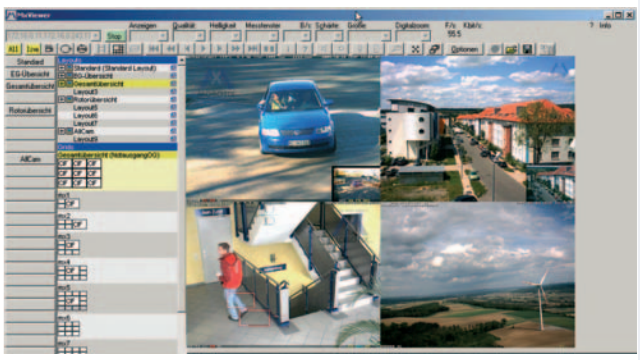
Manually adding cameras and loading recorded video streams

If you have selected the **Define video sources manually** option in the **MxViewer Video Sources** dialog, you can manually add the IP addresses or DNS names of the MOBOTIX cameras.

- **Add**: Adds the IP address or DNS name of the MOBOTIX camera you entered to the list.

If possible, MxViewer shows the image of the last camera you added in the preview window. Click on **OK** to use *all* cameras in the list and to include them in the default layout generated by MxViewer:





Displaying MxPEG Video Clips

MxViewer can show multiple MxPEG clips at once!

MxPEG video clips represent the files that contain the video and audio data stored by either MOBOTIX cameras or MxViewer. These clips can be displayed in MxViewer just like the camera images. In order to display one or more MxPEG video clips, activate the **Layout Editor**, right-click the desired camera windows of the layout one by one and select the **Load Clip** command.

To download sample MxPEG video clips, open the MOBOTIX website `www.mobotix.com`.

3.5 Starting the Camera With an Automatic IP Address (DHCP)

If your network has a DHCP server, you can start the camera with DHCP support. In this case, the DHCP server automatically assigns an IP address.

As soon as startup has been completed, the camera automatically announces its IP address, its network mask and its MAC address (except Web and Basic models; speaker has to be activated). Note, that this announcement function can be deactivated (**Admin Menu > Loudspeaker and Microphone**).

Activate the camera speaker!

Proceed as follows to start the camera using DHCP:

- If the camera is powered on, disconnect the power supply of the camera by unplugging the corresponding cable.
- Connect the camera's power supply.
- Wait until **all six LEDs are lighting up simultaneously for the second time** (about five seconds after connecting the camera's power supply—the LEDs will stay on for 25 seconds).
- Wait for **about 20 seconds after the LEDs have lit up for the second time**, then press and hold the **"R" key**. All LEDs should still be lit when you do this.

Press **"R" key**

… until this shows:

- Only release the key when **the LEDs at the 8 o'clock and 12 o'clock position** are lighting up.
- After about two seconds, the camera plays a sound ("Boing, Boing").
- After about another 15 seconds, the camera will announce its network data, provided it has audio functionality.

You can now access the camera using the IP address it just announced.

Announce IP address: Press "R" key

Note

Simply press the **"R" key** once if you would like to prompt a running camera to announce its network settings.

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

Caution

When starting the camera with DHCP support, make sure that the network has a properly functioning DHCP server. If this is not the case, the camera cannot obtain a valid IP address and will fall back to its last known IP address.

3.6 Starting the Camera Using the Factory IP Address

Under certain circumstances, you may have to reset the camera to its factory IP address. This could be the case if the IP address of the camera has been lost or the camera does not react to the last known IP address.

Passwords and camera settings will not be changed!

Proceed as follows to start the camera using its factory IP address:

- If the camera is powered on, disconnect the power supply of the camera by unplugging the corresponding cable.
- Connect the camera's power supply.
- Wait until **all six LEDs are lighting up simultaneously for the second time** (about five seconds after connecting the camera's power supply—the LEDs will stay on for 25 seconds).
- Wait for **about 20 seconds after the LEDs have lit up for the second time**, then press and hold the **"L" key**. All LEDs should still be lit when you do this.

Press **"L" key**

… until this shows:

- Only release the key when **the LEDs at the 4 o'clock and 12 o'clock position** are lighting up.
- After about two seconds, the camera plays a sound ("Boing").

The camera is now accessible again using its factory IP address (see label on the camera housing).

Note

If you use the camera's **"L" key** to load the factory network configuration, this configuration is not automatically saved to flash memory. Upon restarting the camera the next time **without** using the camera's **"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 ...**

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

Caution

As opposed to resetting the camera using Admin Menu > Reset configuration to factory defaults (see section 1.4.5), the users and passwords defined in the camera will not be reset if the camera is being booted using the factory IP address.

Users and passwords will not be changed!

3.7 Signal Input/Output, RS-232 Interface

The signal lines of the serial interface can also be programmed as additional signal in/ output: Setup Menu > Event Settings > Signal CTS/DSR/RxD. This means that you have a total of four signal input lines

The MOBOTIX camera provides a signal input/output and three additional signal pins on its RS-232 interface (not Basic, Web and M22 models), which you can use as additional signal in/out detectors. You can use the camera's signal input/output to detect an opening door (using a Reed switch) or to switch an external device (e.g. a lamp).

3.7.1 Signal Input

Polarity can be switched

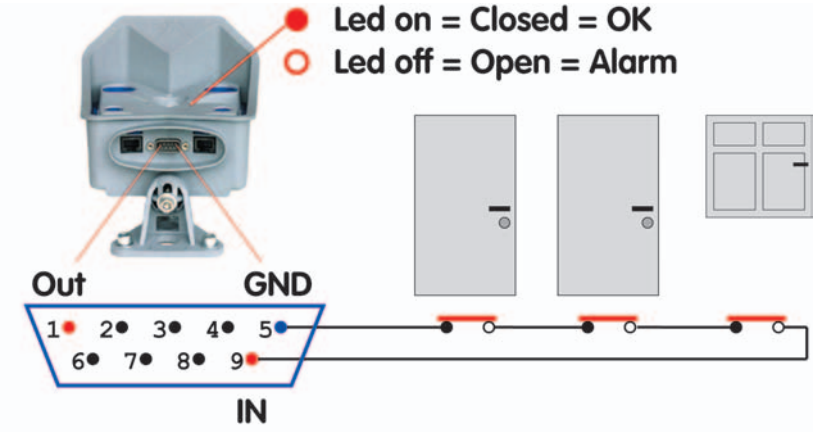
Bridge < 2 kOhms

Integrated low-pass filter

10 kOhms, 10 nF

Pin 9 of the RS-232 connector is used for detecting the signal input. To trigger the signal input, simply connect pin 5 (ground) to pin 9 (no current required). You can also connect other devices (e.g. SPS machines) that close a contact (0V) to trigger the signal input.

Click on **Setup Menu > Event Settings** to specify which state of the signal input should create an event—an open loop or a closed loop. For example, if you would like to secure all windows and doors of a building, connect all closed switches in a serial loop and connect the wires to signal input (pin 9) and ground (pin 5). The wire should have a resistance of less than 2 kOhms. The camera already is equipped with a low pass filter (10 kOhms / 10 nF).



Open **Setup Menu > Event Settings** to activate the additional signal input pins of the RS-232 interface (*Closed/Low* or *Open/High* option; CTS: Pin 8-5, DSR: Pin 6-5, RxD: Pin 2-5). Open **Admin Menu > Setup of serial interface and modem** and configure the serial interface accordingly (**Serial**: *Data*, **Mode**: *I/O Mode*).

Click on **Admin Menu > LED Setup** and set one or more LEDs to *Signal input* to display the state of the input signal for testing (*Signal input* option: loop closed = LED on).

"**0**": Current higher than +3 V ==> inactive ==> LED off
"**1**": Current lower than 0.5 V ==> active ==> LED on

3.7.2 Signal Output

Activate the signal output in Admin Menu > LED Setup or for specific events in Setup Menu > Event Settings

When an event is detected, the MOBOTIX camera can switch the signal output (pin 1). Use the corresponding options in **Setup Menu > Actions** to set how long the camera should close the signal output.

- **Off**: Signal output is open (10 kOhms on 3.3 V)
- **1s, 2s, 5s, 10s, 30s, 1min, 5min**: Closes the contact between pin 1 of the RS-232 connector and ground (pin 5). The signal output is protected against power surges and unwanted feedback (±48 V) and it switches up to 50 mA. It can thus switch a 12 V relay with 0.6 W (24 V relay with 1,2 W).

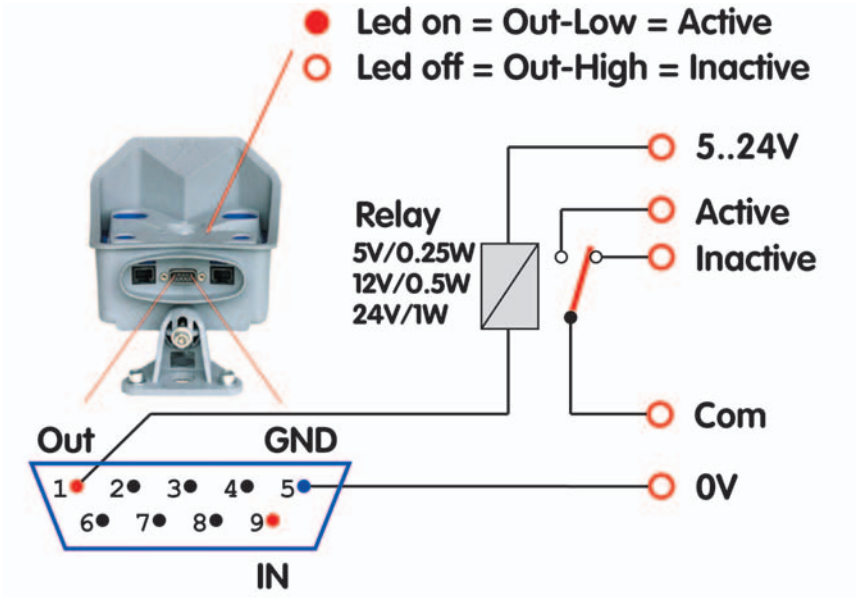
The event settings allow activating the signal output for a certain time only (to generate an impulse)

Open **Setup Menu > Enhanced Signal Out Options** to set custom swiching times for any combination of events (not Basic, Web and M22 models). This dialog also allows using a time table and setting a dead time.

Click on **Admin Menu > LED Setup** and set one or more LEDs to *Signal input* to display the state of the input signal for testing (*Signal input* option: loop closed = LED on).

Functions:

- signal High
- signal Low



Example setup

Note

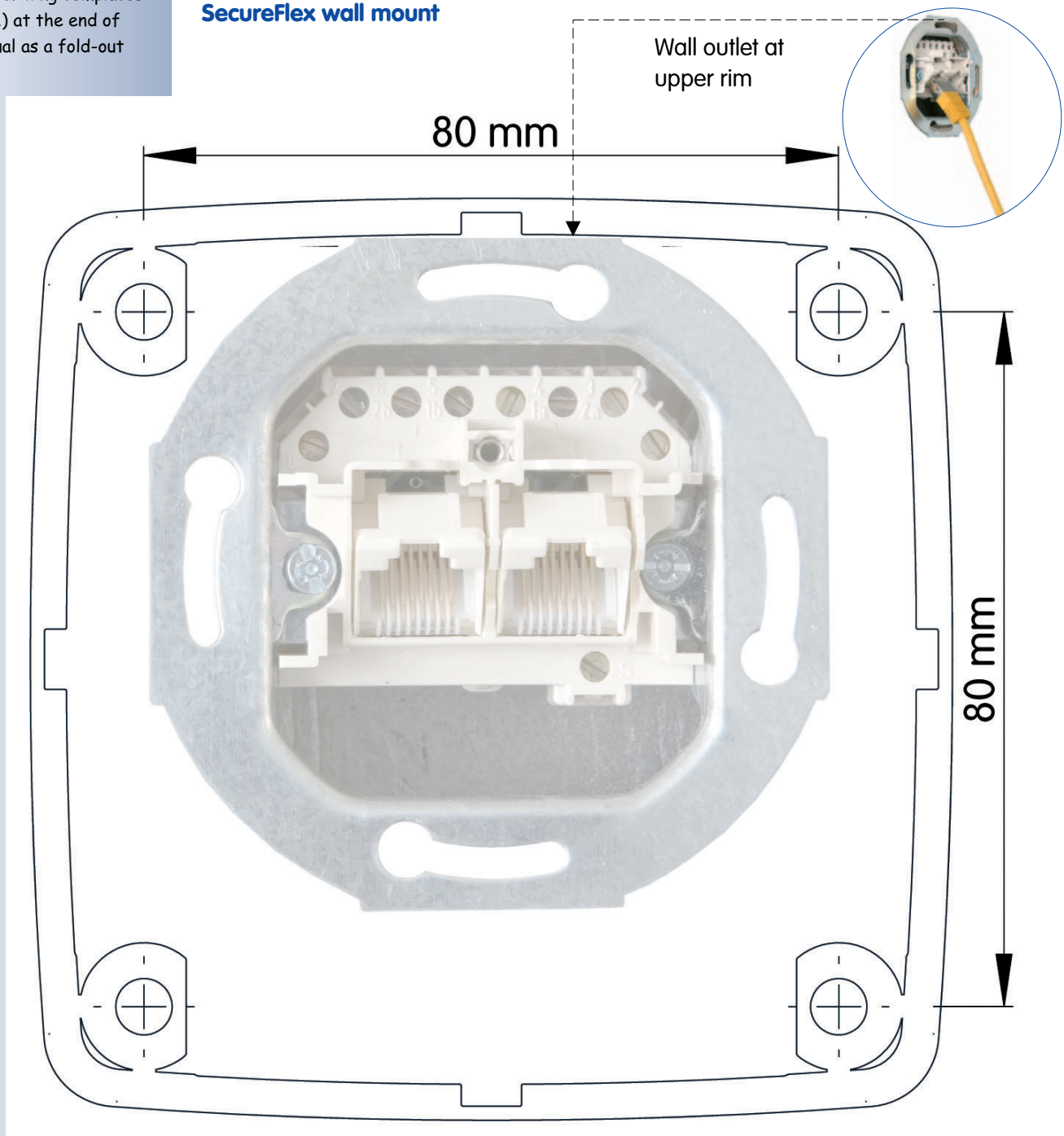
The signal output of the RS-232 interface will assume an inactive state while the camera is (re-)booting and will stay inactive. This does not apply to the I/O pins of the RS-232 interface that have been programmed as output pins.

The polarity of the two signal in/output pins is the reverse polarity of the in/output pins of the RS-232 interface in I/O mode.

Find the drilling templates (scale 1:1) at the end of the manual as a fold-out

3.8 Drilling Templates M10 (Scale 1:1)

SecureFlex wall mount

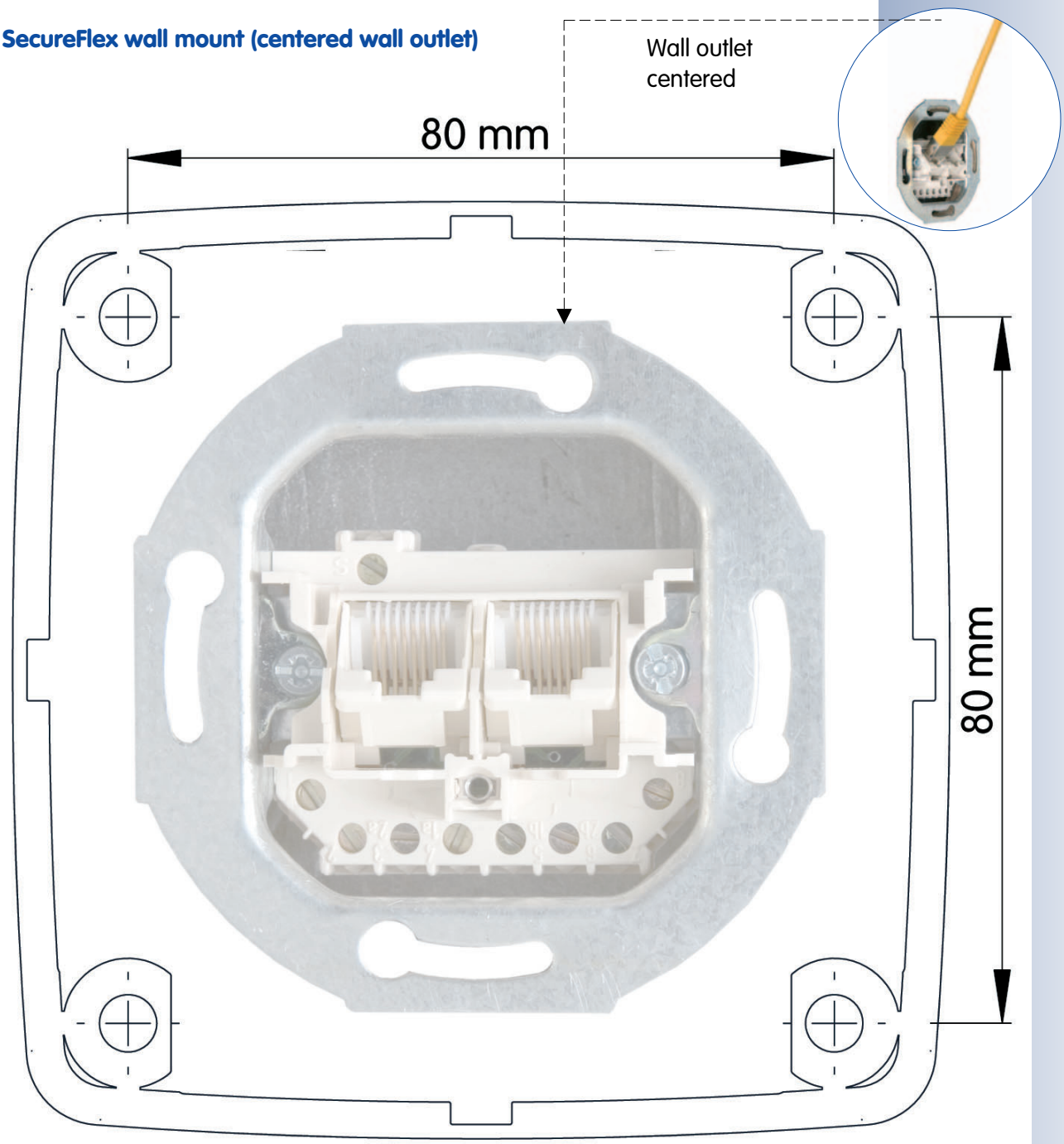


Note

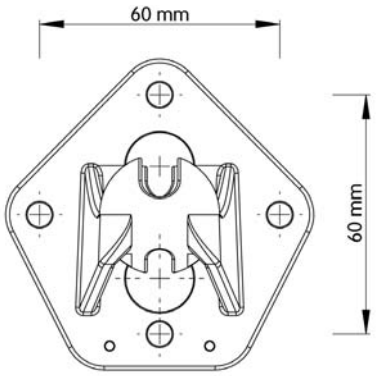
Make sure that the drilling template is not scaled (up or down) when printing the template.

When printing the PDF, make sure that you print two facing PDF pages on one single A4 page in order to obtain a scale 1:1 template.

SecureFlex wall mount (centered wall outlet)



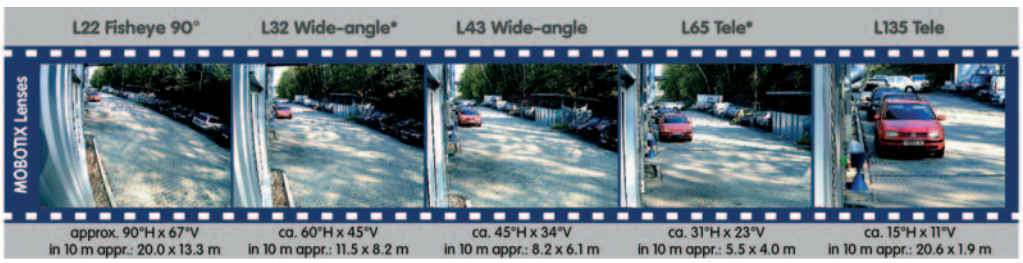
Ball joint wall mount (not scaled 1:1)



M10 Camera Manual Part 1

	M10M-Web *MX-M10M-Web-D43*	**M10D-IT** *MX-M10D-IT-D43D135*	**M10D-IT-DNight** *MX-M10D-IT-DNight-D43N43*	**M10D-Sec** *MX-M10D-Sec-D43D135*	**M10D-Sec-DNight** *MX-M10D-Sec-DNight-D43N43*	**M10D-Sec-DNight** *MX-M10D-Sec-DNight-D135N135*
M10 Hardware Features						
Outdoor weatherproof (IP65)	IP65	IP65	IP65	IP65	IP65	IP65
Mono (M) / Dual (D)	M	D	D-night	D	D-night	D-night
Image Sensor	Color	Color	Color/B&W	Color	Color/B&W	Color/B&W
Image size	**Mega**	**VGA**	**VGA**	**Mega**	**Mega**	**Mega**
Resolution horizontal x vertical	1280x960	640x480	640x480	1280x960	1280x960	1280x960
Max. frame rate CIF/VGA/Mega		25/12/-	25/12/-	25/12/4	25/12/4	25/12/4
Sensitivity at 1/60 second (Lux)	1	1	0.1	1	0.1	0.1
Sensitivity at 1 second (Lux)	0.05	0.05	0.005	0.05	0.005	0.005
Automatic night lens switch	-	-	X	-	X	X
Standard lens	L43	L43/L135	L43/L43	L43/L135	L43/L43	L135/L135
Storage (MB)	**64**	**64**	**64**	**128**	**128**	**128**
Video ring buffer (MB)	12	32	32	64	64	64
CIF images approx.	750	2,000	2,000	4	4	4,000
VGA images approx.	450	1,250	1,250	3	3	2,500
Mega images approx.	150	-	-	800	800	800
Ethernet, ISDN, USB, RS232	E /I / - / -	E /I / - /R	E /I / - /R	E /I / - /R	E /I / - /R	E /I / - /R
CF slots	-	-	-	-	-	-
Microphone/Speaker	-/S	M/S	M/S	M/S	M/S	M/S
External audio (Line-In/Out)	-	-	-	-	-	-
Signal Input	-	1	1	1	1	1
Signal Output	-	1	1	1	1	1
Concealed cabling	-*	-*	-*	X	X	X
In stock	Yes	Yes	Yes	Yes	Yes	Yes

*Concealed cabling for IT and Web models available in July 2006



* available Q3/2006

	Basic Models	Web Models	IT Models	Secure Models
Software Features (All Models)				
Digital zoom (2x, 4x) with panning		X		X
Motion JPEG/MxPEG video streaming	X/X	X/X	X/X	X/X
Custom exposure windows	X	X	X	X
Video Motion Detector	X	X	X	X
Time and event control (FTP, email, logos)	X	X	X	X
Time tables definable	X	X	X	X
Web functionality (FTP, email)	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
Single image recording (pre-/post-alarm images)	3	3	10	50
Terabyte ring buffer (Win/Lin/Mac) via network			X	X
Continuous video/audio recording, 0.2 to 30 fps			X	X
Video/audio recording (event-triggered)			X	X
Event-controlled frame rate with continuous sound			X	X
Flexible event logic				X
Master/Slave arming by one camera				X
Scheduled privacy zones, several areas				X
Bidirectional audio (IP) from/to browser			X	X
Customized voice messages			X	X
VoIP telephony (Audio/Video, SIP)			X	X
Alarm calls to softphones (SIP) e.g. Xten			X	X
Remote alarm notification (via TCP/IP, IP Notify)			X	X
RS232 Data Logger/Terminal			X	X
Programming interface/HTTP API			X	X
Model Limitations				
Image size	VGA	Mega	VGA	Mega
Image sensor (color / B/W)	Color	Color	Color & B/W	Color & B/W
Standard lens for software version	L43	L43	L43	L43
Audio support (Microphone/Speaker)	-/S	-/S	M/S	M/S

Notes:

IP65 Certificate

VDE Prüf- und Zertifizierungsinstitut

VDE VERBAND DER ELEKTROTECHNIK
ELEKTRONIK INFORMATIONSTECHNIK e.V.

ZERTIFIKAT
CERTIFICATE

010924

Auftraggeber / Hersteller *Client / Manufacturer*	**MOBOTIX AG** **Luxemburger Strasse 6** **67657 Kaiserslautern**
Erzeugnis *Product*	**Autarke Webcam** ***Autonomous Webcam***
Typenbezeichnung *Type designation*	**M1M-1** **M1D-1**
Technische Merkmale *Technical characteristics*	**IP65**
Prüfbericht Nr. / *Test Report Ref. No.* *Ausstellungsdatum / Date of issue*	**25147-9010-0001/400WM F33/bhl-wu** **2001-08-17**
Angewandte Normen *Applied standards*	**DIN EN 60529/VDE 0470 Teil 1:2000-09** **EN 60529:1991 + A1:2000**
Geprüfte Abschnitte *Tested clauses*	**12; 13; 14**

Ein Muster dieses Erzeugnisses wurde geprüft und die Übereinstimmung mit den angewandten Normen festgestellt. Der oben genannte Prüfbericht ist Grundlage dieses Zertifikates.
A sample of the product has been tested and found to be in conformity with the applied standards. The above mentioned Test Report is part of this certificate.

Dieses Zertifikat darf Dritten nur in Verbindung mit dem oben genannten Prüfbericht im vollen Wortlaut und unter Angabe des Ausstellungsdatums zur Kenntnis gegeben werden.
This certificate may only be passed to a third party in combination with the above mentioned Test Report in its complete wording and the date of issue.

VDE Prüf- und Zertifizierungsinstitut
VDE Testing and Certification Institute
Fachbereich F3
Department F3

D-63069 Offenbach am Main, **01. Juli 2003**
Merianstraße 28

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Deutscher Akkreditierungs Rat
DAR
DAT-P-024/92-31

Declaration of Conformity

Konformitätserklärung gemäß dem Gesetz über Funkanlagen und Telekommunikationsendeinrichtungen (FTEG) und der Richtlinie 1999/5/EG (R&TTE)

Declaration of Conformity in accordance with the Radio and Telecommunications Terminal Equipment Act (FTEG) and Directive 1999/5/EC (R&TTE Directive)

Déclaration de conformité selon la loi sur les équipements hertziens et les équipements terminaux de télécommunication (FTEG) et la directive 1995/5/EC (R&TTE)

Hersteller/verantwortliche Person: Manufacturer/responsible person: Fabricant/personne responsable :	MOBOTIX AG
erklärt, dass das Produkt: declares that the product: déclare que le produit :	Netzwerk-Kamera Network camera Caméra de réseau
Typ: Type: Type :	M10/V10
Telekommunikations(Tk-)endeinrichtung Telecommunications terminal equipment Equipement de terminal de télécommunication	Netzwerk-Kamera zum Anschluss an das EURO-ISDN Network camera for connection to the EURO ISDN Caméra de réseau pour connecter au RNIS EURO
Verwendungszweck: Intended purpose: Le but suivi :	Übertragung von Bildern und Toninformationen Transmission of images and audio information Transmission d'images et du son

bei bestimmungsgemäßer Verwendung den grundlegenden Anforderungen des § 3 und den übrigen einschlägigen Bestimmungen des FTEG (Artikel 3 der R&TTE) entspricht.
complies with the essential requirements of §3 and the other relevant provisions of the FTEG (article 3 of the R&TTE Directive), when used for its intended purpose.
est conforme aux exigences fondamentales du paragraphe 3 du FTEG (article3 du R&TTE) et des autres clauses s'y rapportant.

Gesundheit und Sicherheit gemäß § 3 (1) 1. (Artikel 3 (1) a))
Health and safety requirements pursuant to § 3 (1) 1. (article 3 (1) a))
Santé et sécurité conformes au paragraphe 3 (1) 1. (article 3 (1) a))

angewendete harmonisierte Normen: harmonised standards applied: normes harmonisées :	EN 60950:2000	(NSR 73/23/EWG & 93/68/EWG) (LVD 73/23/EWG & 93/68/EC) (Directive Basse Tension 73/23/EWG & 93/68/EC)

Schutzanforderungen in Bezug auf die elektromagn. Verträglichkeit § 3 (1) 2, Artikel 3 (1) b))
Protection requirements concerning electromagnetic compatibility § 3 (1) 2, (article 3 (1) b))
Exigences de protection concernant la compa tibilité électromagnétique, paragraphe3 (1) 2; (article 3 (1) b))

angewendete harmonisierte Normen: harmonised standards applied: normes harmonisées :	EN 61000-6-2 EN 61000-6-3	EN 55022, Class B EN 61000-4-2 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 EN 61000-4-11	(EMV-RL 1995/5/EG (R&TTE)) (EMCD 1995/5/EG (R&TTE)) (Directive EMC 1995/5/EG (R&TTE))

Anschrift: MOBOTIX AG
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Addresse : 67657 Kaiserslautern
Germany

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Kaiserslautern, 28.04.2004

Ort, Datum
Place & date of issue
Lieu et date

Dr. Ralf Hinkel
Vorstand/CEO, MOBOTIX AG

Name und Unterschrift
Name and signature
Nom et signature

MOBOTIX ... the new face of IP video

All pictures in this manual are genuine MOBOTIX camera images.
Enjoy the image quality!

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CEO:

Dr. Ralf Hinkel

Court of Registration:
Amtsgericht Kaiserslautern
Registration Number: HRB 3724

Tax Code: 19/650/0812/1
Tax Office: Kaiserslautern

VAT ID: DE 202203501

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CE

Technical information subject to change without notice!

Megapixel
1280 x 960
software zoom

25 Frames/s CIF (320 x 240)
12 Frames/s
VGA (640 x 480)
4 fps Mega

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

Tele/wide angle
Dual Lens
Automatic
day/night switching

microphone & speaker
Audio
bi-directional via IP
variable framerates

SIP-Client
IP Telephony
alarm notify,
cam remote control

Video motion
multiple windows
precision pixel-based

lip-syncronized audio
Recording
event-ringbuffer
30 cams each 25 fps

Live viewing
30 cams at 25 fps
all on one screen

Backlight
safe using CMOS
without mechanical iris

Concealed cabling
Wall bracket
with cable cover
for RJ45 wall outlet

Robust
no moving parts
fiber glass housing

M10
Camera Manual
Part 1

Complete integration for web and security

Current PDF File:
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Security-Vision-Systems
MOBOTIX AG

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