EN 6/09

The MOBOTIX Q24

Discrete Room Overview With One Single Camera Without Any Blind Spots

MADISON TECHNOLOGIES


6


-Panorama
LG

MOBOTIX Hemispheric Camera

The HiRes Video Company MOBOTIX

NEXT GENERATION HEMISPHERIC TECHNOLOGY

The German company MOBOTIX AG develops and produces since 1999 complete high-resolution, network-based video systems that are cutting-edge technology and used around the world.

The new MOBOTIX Q24M Hemispheric camera is the most user-friendly, most efficient and most cost-effective system solution for room surveillance without any blind spots, including video and audio.

High-Resolution 180° Panorama View

Everything in view from wall to wall without any blind spots – one single Q24M replaces several standard cameras and provides a better room overview.

3.1 Megapixels Record More Details

One MOBOTIX camera with 3.1 megapixels records around 30 times more detail than a stan - dard analog camera. This is what makes panorama images possible in the first place.

Digital Flash Recording In The Camera

An integrated MicroSD/SD card replaces external storage devices and provides up to 80 hours continuous recording with audio – cost-efficient, reliable and safe.

Remote Camera Access Via The Internet

With MOBOTIX, a PC is not used to record, but only to view and research images in case of an event – from any location on earth with a network connection.

Complete Solution Including Software

Both the video management software and a 4 GB MicroSD card are included in the Q24M for just EUR 798* – without any hidden costs or additional license fees.

Lowest Installation Costs

MOBOTIX cameras can be quickly and easily installed by any IT technician or electrician with network experience – it's like connecting a printer to a computer network.

Reliable For Both Indoor And Outdoor Use

More than 150,000 MOBOTIX systems are operating successfully worldwide. The weatherproof cameras and operate fail-safe around the clock – from -30 to +6 0 degrees Celsius.

* Prices do not include applicable sales tax • Manufacturer's recommended retail price ex factory Langmeil, Germany • Subject to change without notice
BASIC model EUR 598 without recording/audio, SECURE model EUR 798 with recording/audio • Free software download • www.mobotix.com

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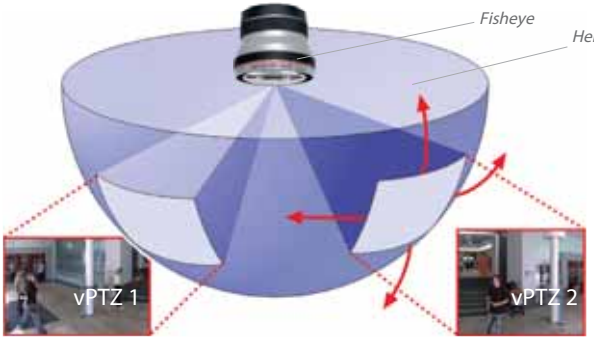
MOBOTIX Hemispheric Camera

INNOVATIVE HEMISPHERIC TECHNOLOGY

The Hemispheric Camera

A Fisheye Perspective

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



When ceiling mounted, the image area of the hemispheric camera covers the entire room. The image in the hemisphere is convex, particularly near the image borders. These image sections are corrected for the viewer by the integrated distortion correction software, allowing a view of the scene from the usual perspective. The virtual PTZ feature allows you to enlarge or move image sections within the hemisphere, just like a PTZ camera yet, with MOBOTIX, this is achieved with no moving parts.

Handle Several Image Sections At Once

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

Q24M in the In-Ceiling Set

Discreet And Low Maintenance

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

Q24 – The Perfect Overview

The Q24 enables a hemispheric 360° panorama view using only a single lens. One single camera can monitor all four corners of a room. The fisheye effect, which is typical for this lens, can be digitally compensated in the live image.

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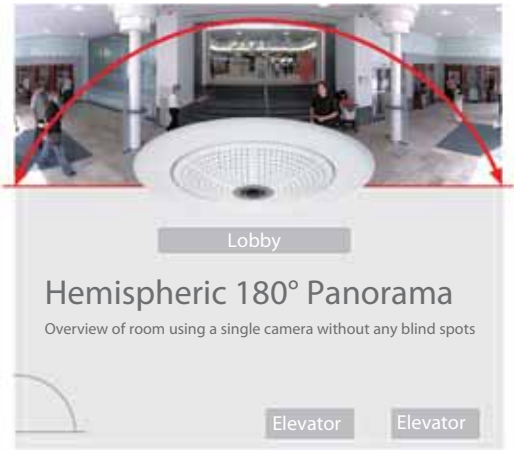
Less Cameras Thanks To Panoramic Views

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



Original Q24M image: Wall mounted at a height of 2.3 m

Hemispheric room coverage for a wall mounting – one Q24M replaces four standard cameras

Keeping Objects In View At All Times

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

Everything Stored In The Recording

In contrast to a normal PTZ camera, which is always focused on one section of a room and only records that section, the virtual PTZ also allows you to pan to other areas at a later stage in the recording as the entire room can be recorded as a hemispheric image.

Integrated MicroSD card (up to 32 GB)

Technology Leader Of Network Cameras
MOBOTIX ranks as the global market leader in high-resolution video systems with a market share of over 60%. Each camera includes a high-speed processor and digital memory (SD Card) for long-term recording (decentralized MOBOTIX concept).

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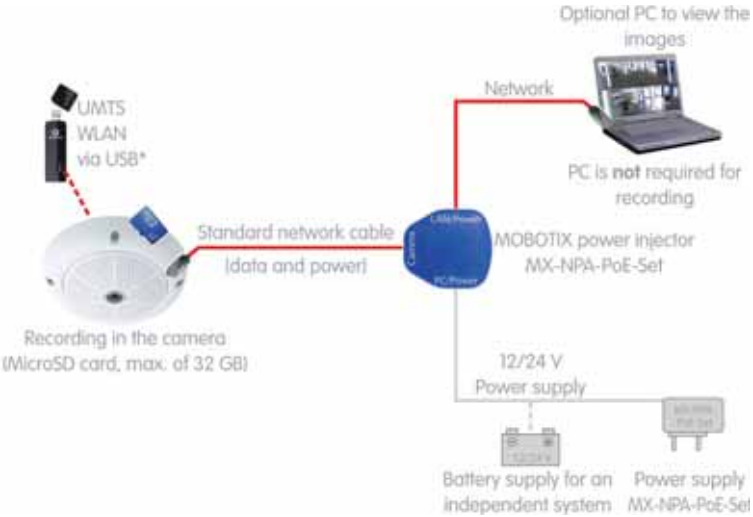
MOBOTIX Hemispheric Camera

MINIMUM COST, MAXIMUM BENEFIT

Technology Made In Germany

MOBOTIX has been developing and producing complete, high-resolution, digital video systems in Germany for a number of years now. Thanks to the superior, decentralized MOBOTIX HiRes technology with camera-integrated storage and the absence of mechanical moving parts, it is now possible to monitor a room without any blind spots for less than EUR 1,000 using only one single hemispheric camera.

Sample Installation
With One Single Camera



Sample Installation with One Camera: Power is supplied via a standard Ethernet cable using the MX-NPA-PoE set or using a battery (mobile surveillance solution).

No PC/DVR Required For Recording

Advanced flash memory (such as a MicroSD card) is integrated in the camera and replaces maintenance-intensive and expensive main memory (PC/digital video recorder). Because everything is processed within the camera itself, the high-resolution images do not have to be constantly transported via the network for evaluation, which minimizes the required bandwidth and considerably reduces system costs. If necessary, the camera can also store data externally on a ring buffer on a server/PC.

** starting Nov. 2009*

Extremely Simple Installation

Just install the camera on the ceiling, wall or pole and connect the network cable or wireless module. Done! No other camera can be connected faster or more easily than a MOBOTIX camera.

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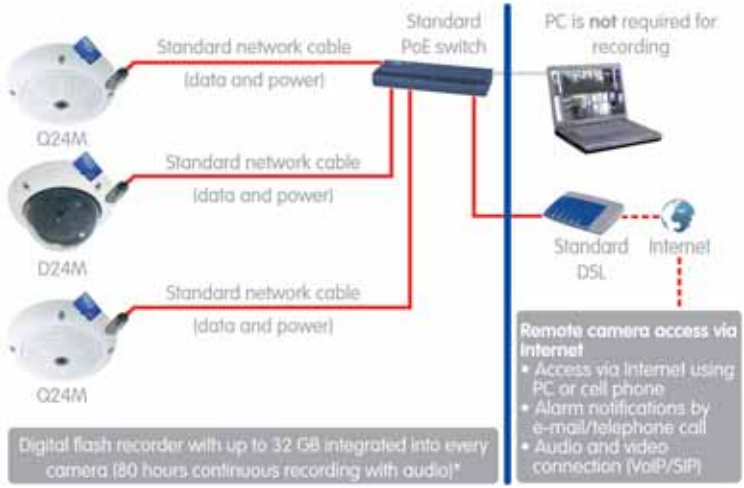


Sample installation with several cameras

Remote access also via cell phone

Sample installation with several cameras: A PoE switch is used for power supply and integration. A standard DSL router is connected to this switch for alarm notifications or remote camera access (DynDNS) via the Internet.

Fewer Cameras And System Components

Due to improved image detail and wide angle images through megapixel technology, MOBOTIX video solutions require considerably less cameras than those of their competitors. Less cabling is required thanks to the cameras' PoE power supply via the network cable and a PoE input on the switch. This enables the uninterruptible power supply (UPS) of all cameras by buffering the PoE switch in the control center.

Simple UPS concept

Simple Installation And Connection

Instead of using a specialist security company, any electrician with network experience can install and connect the cameras, even wirelessly – simply, quickly and cost-effectively. The entire system can be easily expanded at any time. A WLAN connection is also possible without difficulty. Direct encryption-based and secured access to the camera images and alarm messages over the Internet, also to a mobile phone, replace the need to use a fee-based call center. The free of charge MxEasy software automatically finds and integrates up to 16 MOBOTIX cameras into the network in a matter of seconds.

Ask your electrician or IT technician

MxEasy: Configured with a push of a button

** 4 GB memory card included as standard*

Software Included

With MOBOTIX, the software for controlling the camera and searching data can be used at no charge. You can easily control the video system from any standard PC. This even works worldwide via a DSL Internet connection.

MOBOTIX Hemispheric Camera

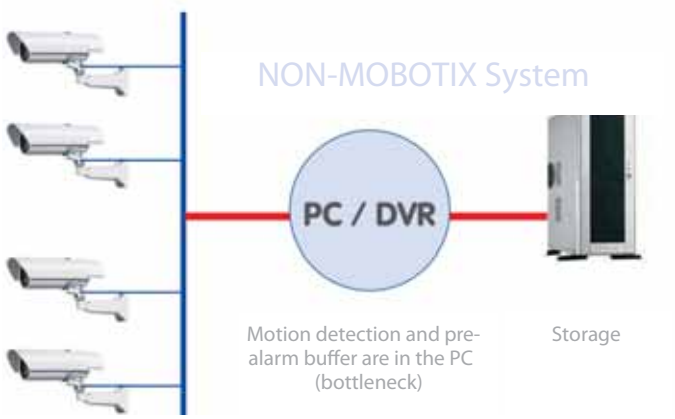
SUPERIOR STORAGE SOLUTION

The Market Demands Better Image Quality

When it comes to future-proof video surveillance systems, it is not a matter of analog or digital but whether it is high-resolution or not. It is important to note that HiRes video only with decentralized network camera technology can be implemented at much lower cost than any other type of video surveillance system.

Central Storage As A Bottleneck

These days, video data is normally pre-processed and stored centrally on a PC or DVR using video management software. Video and audio streams from all installed cameras are directed to this central device. This system is comparable to a highway at rush hour: the more cameras there are, the faster a data jam on the PC or DVR occurs. This means that despite HiRes cameras, the data is generally not stored in high-resolution format.



Central PC is a bottleneck and a risk for the total system

MOBOTIX Stores HiRes Cost Efficiently

MOBOTIX solves the PC storage bottleneck problem using a unique and yet amazingly effective method - through the camera itself. High-resolution video with lip synchronized sound is saved either remotely over the network or locally on flash memory devices (commercial SD or CF cards, USB memory).

Choose Your Storage Location

Every single MOBOTIX camera can be configured to record internally or externally via the network. If necessary, a USB stick can be connected by cable directly to the camera, but on the other side of the wall, where it cannot be stolen.

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Flash memory is a sophisticated form of semiconductor memory without mechanical moving parts and represents the storage medium of the future thanks to its reliability, ease of use and low cost.

Software and storage integrated in MOBOTIX cameras

MOBOTIX Stores Data In Flash Memory

- No PC / network is needed for operations and there is no networ k load
- USB flash media can be connected directly to the camera (instead of internal SD/ MicroSD/CF card); no network is necessary
- Greater reliability (no hard disk drive)
- Ring buffer: Old images can be overwritten automatically or deleted after a speci - fied time

MOBOTIX Stores Data Reliably

MOBOTIX' own flash file system (MxFFS) prevents unauthorized persons from reading or transferring the internally stored data, even if the card is stolen.

Mobotix Only Saves What Is Necessary

The MOBOTIX system includes three important additional options that allow more data to be stored for a longer time:

- Only the relevant image sections are stored instead of the entire image (for example, sky or ceiling is removed)
- Video recording only begins when relevant events take place (such as movement in the image)
- Temporarily increased frame rate during continuous recording of events

By connecting external memory over the network (NAS), the system can be expanded without limitations even while it is running.

MOBOTIX Data Storage

- Inside the camera - one MicroSD card is enough to record all day long, making central data storage devices or PCs unnecessary
- in USB memory (connection via USB cable) data storage without mechani - cal moving parts or network load (greater protection against data theft)
- A **file server** (NAS) can store around 10 times more data from MOBOTIX HiRes cameras (than usual) since they use a memory organization internally

32 GB Flash Memory

Long-term recording in the camera itself: up to 32 GB provide ample space for approx. 180,000 images (4 days with 30 fps) or 2,000 video clips with audio each lasting one minute. Old re cordings may be overwritten automatically or deleted after a specified period of time.

MOBOTIX Hemispheric Camera

THE MOBOTIX Q24M IN DETAIL

Q24M in the In-Ceiling Set

Perfect Room Overview

The MOBOTIX Q24M Hemispheric camera is an elegant, ultra-compact and weather proof IP network dome camera with a special hemispheric lens (fisheye). When mounted on the ceiling, the camera is capable of providing full 360° allround view or a 180° panorama when mounted on a wall. The first of its kind in the world, this camera is evidence of the MOBOTIX commitment to innovation as the global leader in megapixel video security cameras.

High-Resolution 180° Panorama (Wall-Mounted)

When several cameras are monitoring a single room, it is difficult to understand the room layout due to the different viewing directions of each camera. This makes it hard to comprehend the overall setting. The new panorama function of the Q24M delivers a widescreen image of a high-resolution 180° allround view. High image quality is achieved through the use of a 3.1 megapixel sensor and the new hemispheric lens.

Original Q24M image; Wall mounted at a height of 2.3 m in a bank

Original full image

High-resolution 180° Panorama

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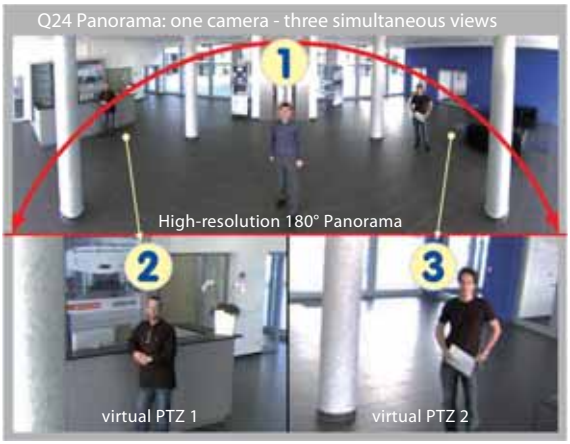
Panorama Focus – One Camera, Three Views (Wall-Mounted)

Maximum room overview while simultaneously viewing detail in a single image: the Q24M is capable of providing two more views at the same time with the 180° panorama, allow - ing you to focus on two scenes in parallel ("Panorama Focus" di splay mode).



Panorama Focus:
Original Q24M image

Original full image

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

When the camera is mounted in the center of the ceiling of a room, "Double Panorama" display mode provides a corrected panorama image of both halves of the room. It cor - responds roughly with the situation of personally standing in the middle of the room and being able to look both forwards and backwards at the same time. A superb overview for the user – provided by a single Q24M camera alone.

Double Panorama:
Original Q24M image

Original full image

MOBOTIX Hemispheric Camera

Full Image And Normal View

With innovative MOBOTIX Hemispheric Technology, an entire room can be ideally monitored. For instance, one single, particularly elegant and discreet, Q24M replaces the time-consuming and expensive installation of several standard cameras. The overview image provided by a single Q24M, which may be tailored in a number of ways according to specific user requirements, not only reduces the number of required cameras, but also minimizes the system costs by reducing the wiring complexity, emergency power requirements and number of recording devices required.

In addition to Panorama, Double Panorama and Panorama Focus views, the Q24M image may be displayed on a monitor in the original fisheye version ("Full Image" display mode), the camera-corrected full image ("Normal" display mode) or in a quad view of all four directions ("Surround" display mode). Switching to a different display mode is possible at any time within seconds.

The large full image, which can be up to 3.1 megapixels, is generated by a special L11 lens. (Perspective horizontal/vertical: 180°/160°)

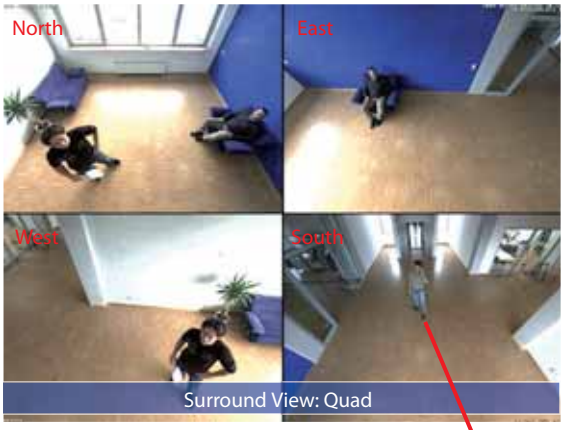
Fisheye Original Image: Full image

The enhancement and correction of the live image take place in the camera itself and do not burden the PC or the network

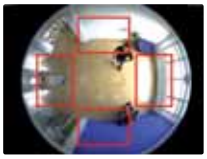
Corrected Image Section: Normal

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

The Q24 "Surround" display mode replaces (when ceiling mounted) four cameras, and shows four directions simultaneously on the monitor in a quad view. The preset North position can be moved to any direction in the image; the camera generates the other three directions (East, South, West) automatically and stores them as separate views.



Original Q24M image: Each of the 4 views can be individually modified



Original full image

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

In order to reduce user workload, the Q24M can store in addition to the North, East, South and West standard views, a total of **256 user-defined camera views** using the vPTZ function , which can easily be brought up using joystick keys or softbuttons. Besides being able to manually bring up specific camera views, the camera can also show them automatically by moving through the North, East, South and West views or by showing the first 16 saved camera views (one after the other like in a slide show).

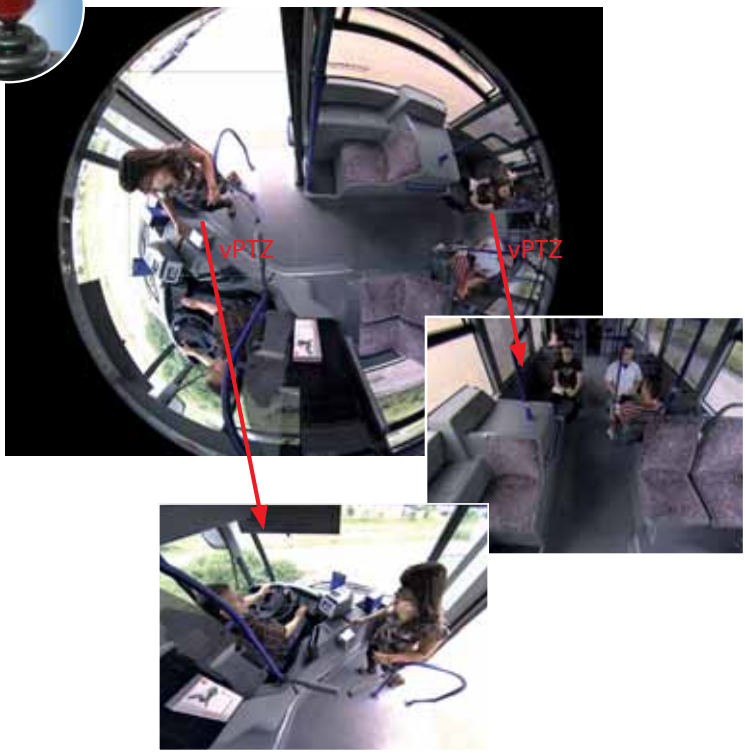
Robust, No-Maintenance Technology
MOBOTIX cameras basically have no mechanical moving parts. This makes the cameras very resistant to wear and tear and reduces both maintenance costs and power consumption.

MOBOTIX Hemispheric Camera

Virtual PTZ (vPTZ) – No Motor Required

The Q24M can zoom in on detail as well. These vPTZ functions are a standard feature in the integrated Q24M camera software. The image from the hemispheric camera can be enlarged using e.g. the mouse wheel, a joystick or a software-controlled PTZ panel, and you can "move" the view to any section of the image. This provides the features of a mechanical PTZ camera without the disadvantages of maintenance and wear.

Quick and easy navigation with a USB joystick



The vPTZ functionality works differently depending on the camera operation platform (web browser, MxEasy, MxControlCenter). Virtual zoom, pan and tilt using MxEasy and MxControlCenter is very simple thanks to special software tools and the use of an optional joystick. However, a joystick may also be used even with pure browser-based operation from Internet Explorer (together with an ActiveX plug-in).

Operation Using The Mouse And Joystick

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

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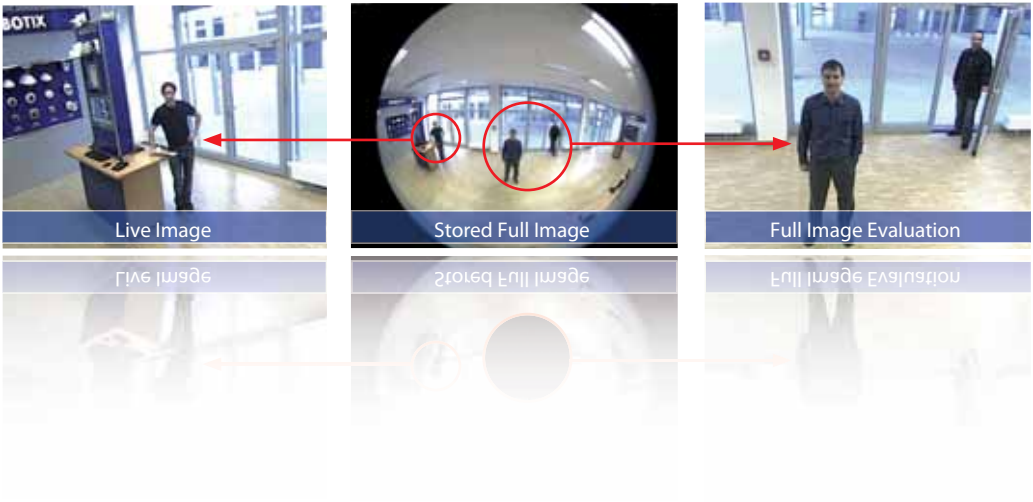
Simultaneous Corrected Live Image And Full Image Recording

All conventional, motorized PTZ cameras only store the image that is currently viewed as the live image (live image recording). This has one serious disadvantage as the recording can only show what has happened in the "visible" portion of the image; the rest is lost and cannot be examined later on. For this reason, MOBOTIX has added the new full image recording feature to the Q24M. This will not store the currently viewed image that reflects the pan/tilt position and the zoom setting chosen by the user, but the full sensor image - without vPTZ settings or image correction. When examining the recorded images at a later point in time, the vPTZ features again come into play, as they allow zooming the visible image and use the pan/tilt features to examine every corner of the recorded full image.

Example: The people marked by the large circle in the middle area of the image would not have been recorded by a regular PTZ camera in the PTZ setting shown in the live image; the full image recording of the Q24M in this example allows you to determine at a later stage the exact time at which the people entered the image area recorded by the camera. A browser (Internet Explorer with MxPEG ActiveX plug-in),MxControlCenter or MxEasy can be used to examine the recorded sequences.

Integrated vPTZ functions allow "analysis" of the complete saved full image at a later point in time (in MxEasy and MxControlCenter)



MOBOTIX Full Image Storage
It is possible to always store a full image (fisheye), regardless of the live image stream that is being displayed. As a result, the recording always contains the full image, even though the viewer may have used the vPTZ features to zoom into the image in order to examine a specific detail.

MOBOTIX Hemispheric Camera

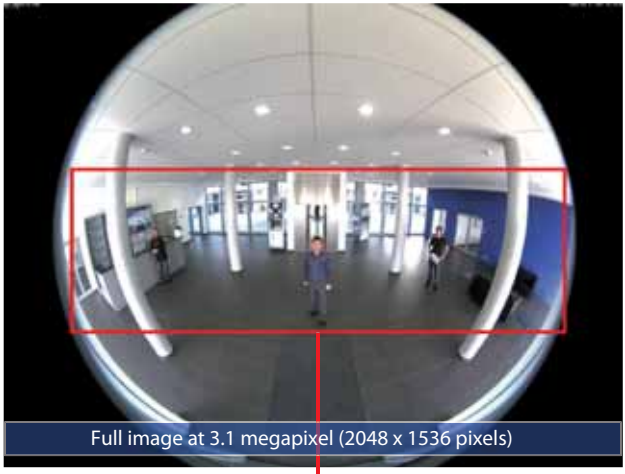
Maximum Ease Of Use

The camera software is responsible for image correction, reducing load on the user PC

The full image generated by the hemispherical lens (fisheye) can be difficult to evaluate. MOBOTIX solves this problem with image distortion correction in the camera software that displays perfectly corrected live images. The user PC does not experience any additional load through this process, as image correction and generation of all desired image views takes place in the camera itself. The result is that a large number of panoramic cameras may be displayed simultaneously on a single PC.

Highly Efficient, Application-Oriented Image Transfer

While other camera systems must transport the full 3.1 megapixel image over the network for further processing, a MOBOTIX camera will only transmit the desired image sections. This means that a Q24M panorama image will only require a small part of the usual data and bandwidth. Data from up to six times as many MOBOTIX cameras may be transported over the same network compared to "standard" cameras.



Corrected image after panorama correction

Economical bandwidth usage due to smaller, in-camera corrected images (no loss of image information)

Internal DVR With 32 GB

The Q24M saves up to 400,000 panorama images or 33 hours of high-resolution video with sound directly to the integrated flash memory, without requiring an external stor age device or PC, therefore using no additional network load.

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Internal DVR

The Q24M SECURE model features direct recording to integrated MicroSD cards , which makes the camera fully independent of any external storage media, even for longer periods of time. The camera internally saves high-resolution video and audio, without requiring an external storage device or PC or overloading the network whatsoever. Old recordings may be overwritten automatically or deleted automatically after a specified period of time. A 16 GB MicroSD card, for example, allows the camera to store more than a quarter million event images in VGA format (640 x 480). For security reasons, the camera can even encrypt the stored data.

4 GB MicroSD card preinstalled in the camera (Q24M-Secure)

Power failures are not an issue, as the video and image sequences remain safely stored on the MicroSD card. Access to stored video sequences is possible at any time from the camera user interface in the browser, MxControlCenter or MxEasy. If you would like to archive sequences, you can store all of the data or only certain parts to a computer or external hard disk.

High Frame Rates Of Up To 30 fps

Like all other MOBOTIX cameras, the Q24M models can generate live video streams with high frame rates and a maximum image resolution of 3.1 megapixels (QXGA with 2048 x 1536 pixels). Up to 30 fps are generated at a megapixel resolution of 1280 x 960 pixels. Even at 3.1 megapixels, the camera will still generate up to 20 fps! And the audio playback is always lip-synchronous.

Robust And Maintenance-Free

Thanks to its low power consumption of approximately 3 watts and the total absence of mechanical moving parts, the Q24M models feature the highest operating temperature range from -30°C to +60°C (-22°F to +140°F). Both Q24M models (BASIC & SECURE) are absolutely dust proof to IP54, with the SECURE model being resistant against water jets (IP65) also. Since the cameras neither fog up nor require heating, power can be supplied all-year round via the Ethernet cabling using standard PoE products.

Camera Design Creates New Applications

Some application scenarios benefit from a surveillance camera that is present, but doesn't attract attention. The low-key elegance of the camera's design, especially when installed with the In-Ceiling set, makes the Q24M the ideal solution for the intersection of discreet design and inconspicuous look. For example, hotels and restaurants – not to mention installations in public buildings, waiting rooms, and showrooms – present a suitable backdrop for this type of equipment.

MOBOTIX Saves Securely
Due to its lack of any moving parts, flash memory is particularly reliable and secure. The MOBOTIX flash file system (MxFFS) means that data stored internally cannot be read or transferred by unauthorized third parties, even if the card is stolen.

MOBOTIX Hemispheric Camera

The integrated DVR functionality with long-term storage on a MicroSD card also makes the camera an ideal solution for mobile applications since it only requires a power supply via the network cable (standard PoE) for full event-driven recording with video and audio, thus delivering a complete standalone product . Application examples in this context are installations in public transportation such as busses, trains, aboard ships, airplanes, etc.

Q24M in the In-Ceiling Set (local public transport bus)

Q24M in the In-Ceiling Set with stainless steel ring (elevator)

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MxEasy – Intuitive Application For Windows, Macintosh And Linux

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

For more than 16 cameras, we recommend the free **MxControlCenter 2.0** software

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

For the first time, this tool not only controls video and audio recording based on certain time and date information, but also allows activating/deactivating features like video motion detection, image brightness and the microphone based on a date and time schedule.

MxEasy is available as a free-of-charge download for MS Windows and Mac OS X operating systems under www.mobotix.com. A Linux version will be available soon.

Software Included
Download MxEasy and MxControlCenter free of charge for various operating systems from www.mobotix.com

MOBOTIX Hemispheric Camera

SIMPLE AND FLEXIBLE INSTALLATION

The Q24M, being an overview camera, is primarily designed for installation on walls or ceilings. The supplied hemispheric L11 180° lens captures the entire room, practically from wall to wall and from the floor to the ceiling.

Q24M with
In-Ceiling Set

Multiple Installation Options

MOBOTIX cameras can be used under almost all weather and temperature con - ditions and they also offer suitable installation materials from a wide range of accessories for any conceivable application and installation scenario.

The Q24M is available in SECURE and BASIC models , which come with different features. Both models can also be ordered with an L22 Super Wide-Angle lens with a horizontal image angle of 90°. It is also possible to install the camera without any special accessories.

The In-Ceiling Set offers the most stylish installation option for the Q24M and can also be used to mount the camera on a wall. When properly installed, the only visible component is a particularly sleek and discreet hemispheric camera, while most of the remaining components are concealed inside the ceiling.

Network Connection And PoE Power Supply

In the Q24M, the same network cable is used for both the network connection and the PoE power supply. The pre-installed patch cable attached to the camera is connected with the (Cat. 5) on-site network cable. The PoE current is simply fed into the network cable using a PoE switch or the convenient MOBOTIX NPA-PoE set.

Wall installation with
10° On-Wall Set

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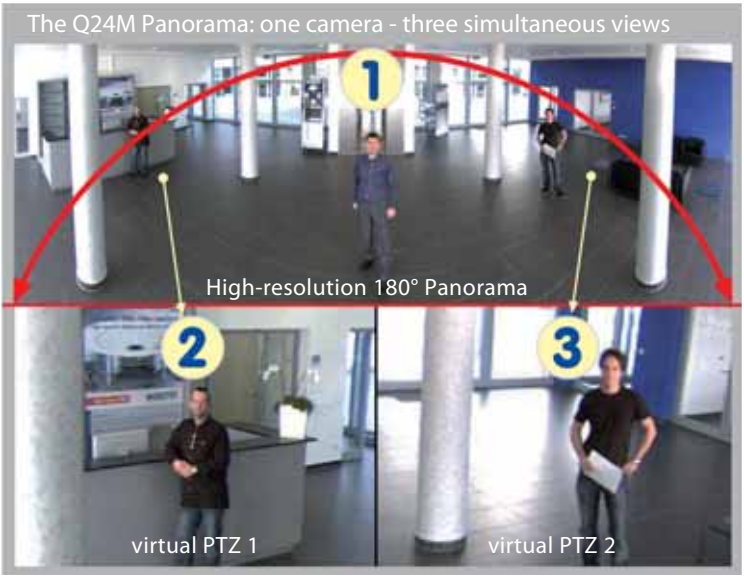
Wall-Mounted

To make optimal use of the high-resolution 180° panorama functionality of the Q24M, the camera must be mounted on an internal or external wall. The entire hemisphere of the room directly in front of the camera is then effectively monitored, from the wall on the left of the camera to the wall on the right. Corresponding fine-tuning in the user interface software allows the displayed panorama image to be adjusted to different practical appli - cations (see section 3.3).

Wall installation with 10° On-Wall Set

The camera should preferably be mounted in the middle of the room to be monitored using the 10° On-Wall Set

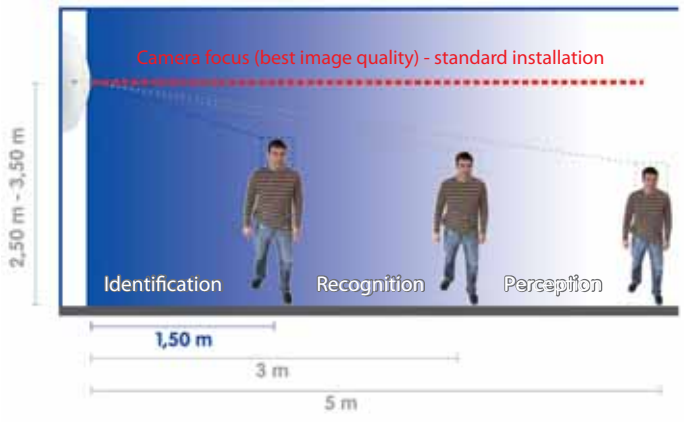


Original image from the camera shown above using the 10° On-Wall Set (Panorama Focus View)

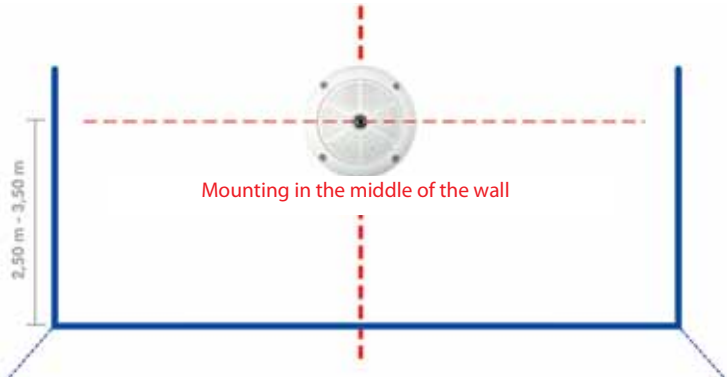
MOBOTIX Hemispheric Camera

Selecting An Appropriate Camera Position

The Q24M is primarily suited to providing an excellent overview, and less suitable for more exact details. For active operation, the camera should be mounted at a (out of direct reach) height ranging from 2.5 to 3.5 m. People, for example, may be identified very well at distances of up to 1.5 m, and with sufficient detail at up to 3 m. Objects can be recognized even at distances of 5 m and more from the camera. During installation, ensure that the camera is focused on the most important areas of the room as directly as possible, in order to provide the desired level of detail recognition. For wall installation, use of the 10° On-Wall Set is ideal in many cases.



Recommendation:
Mounting the camera in the middle of the wall



Lowest Installation Costs

Any electrician with network experience can connect MOBOTIX cameras to a computer network using inexpensive standard IT components (just like connecting a printer).

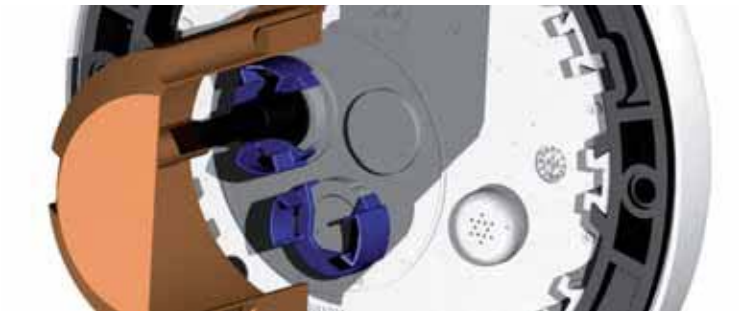
Wall Installation With The 10° On-Wall Set For Image Optimization

An on-wall set, available as an accessory in 0° and 10° inclinations, may also be used for installation. While the 0° set primarily offers easier installation and more storage space for cables and add-on modules (WLAN, connectors, etc.), the 10° set may also increase the image quality in certain cases. In particular for wall installations which must be carried out at greater heights for technical or other reasons (over doors, windows, etc.,) adding a slight tilt to the camera, and thus also the lens, will return better results, as the center of the lens is then focused more directly on the center of activity in the room (optimal utilization of lens capabilities).

Optimized image quality through wall installation with On-Wall Set 10°

Wall Mounting Over A Wall Outlet

Professional wall or ceiling installation of a Q24M is generally possible without accessories. However, due to elevation of the rear casing of the camera caused by connections and holders, a wall outlet should be installed prior to camera installation (see drilling template Q24M). This provides perfect protection to the cabling, ensuring that it cannot be seen or damaged from outside.



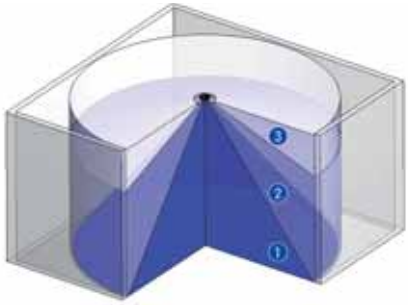
Lowest Maintenance Costs
Fiberglass-reinforced, robust housing with fully concealed cabling and no moving parts guarantees long product life without the need for maintenance.

MOBOTIX Hemispheric Camera

Ceiling-Mounted

Discreet ceiling installation using the In-Ceiling Set

Thanks to its hemispherical lens, a single Q24M can monitor an entire room right into each of the four corners (360° Panorama View). The camera's should ideally be positioned on the ceiling in the center of the room. Due to its inherent physical and optical properties, the precision of the lens decreases as the distance from the lens grows. This means that the maximum usable image area varies greatly depending on the intended purpose of the camera. Rooms with a square floor area of up to approx. 40 m² in general allow recognizing details even at the borders of the full image. If you would only like to know if persons enter a room, or to monitor specific objects, rooms of up to 100 m² floor area can be monitored using a single Q24M.



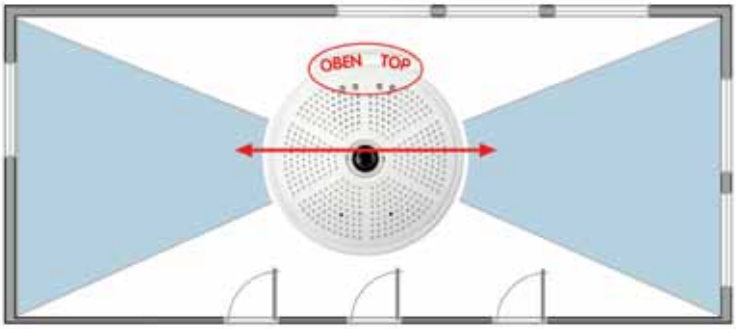
The image quality (precision) diminishes as the distance of an object to the camera focus point increases: 1 very good, 2 good, 3 satisfactory

Wall Mount (MX-OPT-WH)

Outdoors, the Q24M is usually mounted on a building wall, corner or pole instead of the ceiling. For this situation, we recommend the use of the practical wall mount from the range of accessory products (section 2.8) or an extension.

Non-Square Rooms

When viewing a 360° (full) image in the browser, you will notice that the top and bottom of the image is not fully visible, i.e. some image information has been clipped. This is not a fault of the camera, but intended behavior that aims at achieving the best possible utilization of the image sensor by the camera software. Bearing this in mind, it is advisable to install the Q24M in rectangular room ceilings so that the arrow marked OBEN / TOP points towards one of the longer walls of the room as shown in the figure.



Original full image from the Q24M (ceiling installation in a rectangular room)

MOBOTIX Hemispheric Camera

CAMERA HOUSING AND CONNECTORS

The MOBOTIX Q24M consists of the camera housing (motherboard and lens), the outer shell and the mounting ring.

Connections

- Network (Ethernet network incl. PoE power supply)
- MiniUSB (e.g. for ExtIO)
- Slot for MicroSD card

The camera can be connected by network cable

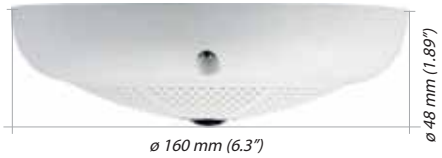
A MiniUSB is provided for extensions such as ExtIO

The connection cables are connected directly in the rear casing of the camera using special, securely sealed MOBOTIX connectors

Maximum Reliability
Over 150,000 MOBOTIX systems are in use successfully throughout the world. These cameras operate resiliently around the clock.

MADISON TECHNOLOGIES

Camera Dimensions



The discrete camera with its compact dimensions is not much bigger than a smoke detector

Weatherproofed Cabling (IP65) - Patented By MOBOTIX

MOBOTIX cables passing into the back of the camera (patch cable for the Ethernet connection and ExtIO cable) are secured using a special waterproof cable retainer with bayonet catch (IP65).

When replacing this cable, ensure that the cable is properly seated in the port and that the retainer with the blue bayonet catch is locked (short clockwise turn until it clicks into place).

Open the cable retainer by rotating the bayonet catch to the marked position

Bayonet catch closed

Bayonet catch open

Only use original MOBOTIX cables to connect the camera. Standard cables purchased from other suppliers do not meet the necessary specifications for proper retention (no IP54 and IP65 weather protection).

Ethernet patch cable (left) and Mini USB (right) with washer

Weatherproof (IP65)
The robust and weatherproof MOBOTIX cameras work without mechanical moving parts virtually maintenance free and without wear and tear.

MOBOTIX Hemispheric Camera

AVAILABLE Q24M A CCESSORIES

On-Wall Set (MX-OPT-AP)

Consists of On-Wall Mount and mounting supplies. Conforms to U.S. installation standards. Reliably protects the cabling and allows integrating additional modules within the On-Wall Mount (WLAN, battery, ...).

10° On-Wall Set (MX-OPT-AP-10DEG)

Consists of On-Wall mount and mounting supplies for inclined installation (10°) of a camera. Conforms to U.S. installation standards. Reliably protects the cabling and allows integrating additional modules within the On-Wall Mount (WLAN, battery, ...).

Vandalism Set (MX-Q24-Sec-Vandal-ESPO)

Consists of polished stainless steel housing, lens protector and security screws. Ideally suited for surveillance at critical locations.

Vandalism Set (MX-Q24-Sec-Vandal-ESMA)

Alternative design featuring matt stainless steel housing. Same as above plus lens protector and security screws.

MADISON TECHNOLOGIES

In-Ceiling Set (MX-OPT-IC)

Simple installation from the front. Suitable for discreet surveillance. Optionally available with a stainless steel ring.

Also suitable for mounting to drywall

Outdoor Wall Mount (MX-OPT-WH)

Consists of Outdoor Wall Mount and mounting supplies. Covers RJ45 wall outlets. Space for expansion modules (battery, UMTS, WLAN, etc.). Easily mounted to poles using Pole Mount. Weatherproof IP65.

Corner And Pole Mount (MX-OPT-MH)

Flange for Outdoor Wall Mount. Can be mounted to wall corners or poles. 3 mm stainless steel, white. Wall Mount may be ordered separately or as a set.

Network Power Adapter Set (MX-NPA-PoE-Set*)

The Network Power Adapter Set is a remote power supply for the MOBOTIX Q24M into the network cable. This makes it possible to use the network cable to supply power up to 100 m. The MOBOTIX Network Power Adapter Set including power supply with RJ45 connector is required if you do not use a PoE compatible switch or router to supply power to the MOBOTIX camera.

* Country-specific versions of the set are available from MOBOTIX (DE, US, GB, AUS, JP)

MOBOTIX Hemispheric Camera

	Hemispheric		L22-90°	
	Q24Mi- Basic D11 *MX-Q24Mi-Basic-D11*	Q24M- Secure D11 *MX-Q24M-Sec-D11*	Q24Mi- Basic D22 *MX-Q24Mi-Basic-D22*	Q24M- Secure D22 *MX-Q24M-Sec-D22*
Q24M Hardware Features				
Outdoor weatherproof	IP54	IP65	IP54	IP65
Ethernet/ISDN/USB/RS232	E /- / - /-	E /- / U*/-	E /- / - /-	E /- / U*/-
MicroSD slots	-	1	-	1
Integrated microphone/speaker	-/X	X/X	-/X	X/X
Mono (M) / Dual (D)	M	M	M	M
Image Sensor	Color	Color	Color	Color
Lens	L11	L11	L22	L22
Resolution	VGA	3 MEGA	VGA	3 MEGA
Resolution horizontal x vertical	640x480	2048x1536	640x480	2048x1536
Max. frame rate CIF/VGA/MEGA/3MEGA (fps)	16/16/-/-	30/30/30/20	16/16/-/-	30/30/30/20
Sensitivity at 1/60 second (lux)	1	1	1	1
Sensitivity at 1 second (lux)	0.05	0.05	0.05	0.05
RAM Storage (MB)	64	128	64	128
Temp. video storage, ring buffer (MB)	2	64	2	64
Internal DVR (MicroSD card), ring buffer (GB)**	-	up to 32	-	up to 32
• CIF images (for 32 GB int. DVR), approx.	-	2 mil.	-	2 mil.
• VGA images (for 32 GB int. DVR), approx.	-	1 mil.	-	1 mil.
• MEGA images (for 32 GB int. DVR), approx.	-	350,000	-	350,000
• 3 MEGA images (for 32 GB int. DVR), approx.	-	160,000	-	160,000
External audio (Line-In/Out)	-	-	-	-
Signal input pins	-	-	-	-
Signal outputs	-	-	-	-
Concealed cabling	X	X	X	X
Q24M Software Features				
Digital zoom (continuous) with panning	X	X	-	X
Panorama and surround views	X	X	-	-
Additional storable views	X	X	-	X
Full image recording	-	X	-	X

*Special MiniUSB adaptor cable available as an accessory

**A 4 GB MicroSD card is included with all Q24M Secure models, MicroSD cards of up to 32 GB may be used (SDHC)

MADISON TECHNOLOGIES

	Hemispheric	L22-90°
Lens Table	**L11**	**L22**
Original image		
35 mm equivalent focal length	11mm (0.43 in)	22 mm (0.87 in)
Actual focal length	1,8 mm (0.07 in)	4 mm (0.16 in)
Aperture	2.0	2.0
Horizontal image angle	180°	90°
Vertical image angle	160°	67°
Distance 1 m (1.09 yd):	m	m
Image width	infinite	2.0
Image height	11	1.3
Distance 3 m (3.28 yd):	m	m
Image width	infinite	10.0
Image height	55	6.6
Distance 10 m (10.94 yd):	m	m
Image width	infinite	20.0
Image height	110	13.3
Distance 20 m (21.88 yd):	m	m
Image width	infinite	40.0
Image height	220	26.6

L22 design for high-resolution 90° image angle for monitoring a room from a corner

Notes

The specified focal lengths of MOBOTIX lenses do not reflect the actual focal length of the lenses, but the focal length (L*xx* mm) converted to 35 mm camera format. For example, the MOBOTIX Super Wide-Angle lens has an actual focal length of 4 mm. This would be the equivalent of 22 mm on a 35 mm camera. This lens is thus called *L22*.

Stated focal lengths of MOBOTIX cameras are given with reference to a 35 mm camera

MOBOTIX Hemispheric Camera

THE MOST IMPORTANT COST BENEFITS

1. **Increased resolution reduces amount of cameras needed**
   1536-line, high-resolution sensors give a better overview and allow monitoring an entire room with just one camera from the corner
2. **Reduced installation costs at any distance**
   Standard Ethernet connection enables the use of use of common network components such as fiber, copper and wireless (WLAN)
3. **IIntelligent recording technology reduces required storage**
   Decentralized recording technology in the camera software puts less strain on PCs and reduces the amount of storage PCs (DVRs) by 10 times
4. **Event-controlled image rate minimizes storage costs**
   Event-driven, automatically adjusted recording frame rate based on event or sensor action reduces amount of data and storage costs
5. **No additional power and no heating required**
   Anti-fogging without heating allows usage of standard PoE technology to power the system via network and saves costs of power cabling
6. **Backup power requirement reduced by 8 times**
   Low power consumption, approx. 4 watts, enables year-round (no heating required) PoE with one centralized UPS from installation room via network
7. **Robust and practically maintenance free**
   Fiberglass-reinforced composite housing with built-in cable protection and no mechanical moving parts (no auto iris) guarantees longevity
8. **No software and no licence costs**
   Control and recording software is integrated in the camera and is free of charge; new functions are available via free software downloads
9. **Unlimited scalability and high return of investment**
   While in use, more cameras and storage can be added at any time; image format, frame rate & recording parameters can be camera specific
10. **Additional functions and other extras included**
    Audio support, lens, wall mount and weatherproof housing (-30° .. 60°C;-22° .. 140°F) are included; microphone & speaker available in certa in models

THE MOST IMPORTANT TECHNICAL ADVANTAGES

Progressive-scan instead of half-frame blur
Megapixel sensor and image processing inside camera with digital white balance generates sharp and true color images at every scale

1

Sun and backlight compensation
CMOS-sensor without auto iris, digital contrast enhancement and configurable exposure measurement zones guarantee optimal exposure control

2

Dual camera technology: 2-in-1
Two possible camera views with picture-in-picture technology or 180° panoramic view; one Dual-Fixdome camera with 2.5 megapixel is enough

3

Long-term, high-performance Terabyte recording included
Event detection and ring buffer recording by the camera itselfallow recording of 40 smooth video streams on a single PC (1200 VGA images/s)

4

Simultaneous recording, event search and live viewing
Live video for multiple users, recording and event search simultaneously possible in seconds from anywhere in the world via network

5

Very low network load
Efficient MxPEG video codec, motion detection based recording and video buffering inside camera guarantee a very low network load

6

Bridging of recording during network failures
Internal camera ring buffer bridges network failures and bandwidth fluctuations of wireless links (WLAN/UMTS) for several minutes

7

Day & night maintenance free
Unique Day/Night camera technology without moving parts guarantees extreme light sensitivity and ensures long-term reliability

8

Audio and SIP telephony
Lip-synchronized audio (live & recording); each camera is a vid eo IP telephone based on SIP standard with automatic alarm call and remote cont rol

9

MxControlCenter included
Dual screen technology with building plans, free camera positioning, event search, image processing, lens distortion correction and PTZ su pport

10

MOBOTIX Hemispheric Camera

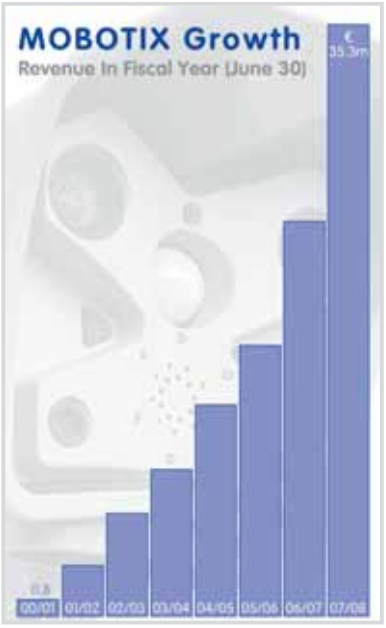
HiRes Video Innovations

The German company MOBOTIX AG is known as the leading pioneer in network camera technology since its founding in 1999, and its decentralized concept has made high resolution video systems cost efficient. Whether in embassies, airports, train stations, ports, gas stations, hotels or on highways – over hundred thousand MOBOTIX video systems have been in operation on every continent for years.

Pioneer In Network Camera Technology

In just a short time, MOBOTIX has become the second strongest supplier in Europe and takes fourth place worldwide in terms of market share. MOBOTIX has been producing megapixel cameras exclusively for years and, in this area, ranks as the global market leader in high-resolution video systems with a market share of over 60%. The decentralized MOBOTIX concept is characterized by the fact that a high-speed processor is built into every camera and, if required, a digital memory (MicroSD card) can also be integrated for long-term recording.

MOBOTIX cameras can make event-driven recordings even without a central PC or DVR and can digitally store videos with sound for a long time. This is why MOBOTIX solutions represent an unbeatably good value despite their better image quality, even for small-scale installations.



Free Consulting Service

Simply call us or send us an e-mail. We will get in touch with you promptly.

You can also consult your electrician or IT technician

With MOBOTIX, you are in the best hands right from the start. Both our in-house project managers and our experienced, highly-specialized Secure partners ensure that every system is optimally designed and installed.

Our support specialists will help you with any technical questions you may have.

MOBOTIX Training Programs And Seminars
MOBOTIX has its own training center with an extensive offering for all interested parties, customers, partners and security companies. MOBOTIX offers seminars for basic and advanced users. For more information: www.mobotix.com

EN 6/09

The MOBOTIX Q24

Discrete Room Overview With One Single Camera Without Any Blind Spots