D12D-Outdoor Technical Specifications
Dual-FixDome Day&Night IP Camera

Security-Vision-Systems

MOBOTIX.com

... the new face of IP video

D12D-Outdoor: Weatherproof 2.5 Megapixel IP Camera System

The D12D-Outdoor Dual FixDome camera with wall mount and weather protection is ideally suited for buildings with state-of-the-art façades. The new wall mount conceals cabling and fully covers standard RJ45 wall outlets. The D12D features two independent camera modules attached to movable swivel mounts that enable free positioning of the modules in almost any direction. When using two super wide angle lenses, the camera can show a 180° wide field of vision with a resolution of 2560 x 960 pixels. The Night variant of the camera has one color camera module with daylight lens and one B/W camera module with IR-sensitive lens. Depending on the illumination, the D12D-Night will automatically switch between the day and night camera modules—reliably and without any moving parts.

Digital zoom, digital panning, video motion detection, event-controlled frame rates and freely selectable image sections reduce the storage requirements of the D12 to a minimum. The integrated camera software features include alarm management with pre- and post-alarm images, FTP, e-mail, external ring buffer storage on Windows, Linux and Mac OS X computers as well as playback and MultiView functions for up to 30 cameras in the browser.

Since the camera does not require additional heating, power can be supplied via the network cabling. Operating temperature ranges from –30° to +60°C (-22°F to +140°F). An ISDN modem is integrated as well.

Highlights

- Outdoor camera (IP65) with wall mount and weather protection
- Dual image sensors (two lenses), either color/color or color/B&W IR
- Microphone, speaker and PIR detector
- Bidirectional IP & ISDN telephony
- Audio transmission to the browser
- Definable exposure zones
- Integrated video motion detection
- NightVision with up to 1 sec. exp. time
- Digital zoom and panning
- Video/audio recording and playback
- Software DVR for Windows/Linux/OS X
- Alarm management with pre- & post-alarm images

Dual Camera System 2.5 Megapixels

- Fully digital color CMOS image sensor with 1280x960 pixels and backlight correction
- Fully digital B/W CMOS image sensor with 1280x960 pixels and eight times higher sensitivity
- Two 8 mm standard wide-angle lenses: 5-element glass lens 1:2.0, 45° horiz.
- Optional: Super wide angle lens, 90° horiz.

Automatic Exposure Without Iris

- Auto exposure times from 0.1 msec to 1 sec
- Configurable min./max. shutter speeds
- Freely definable exposure windows
- Purely software-based control with exposure windows, white balance, automatic contrast, sharpness filter and backlight correction
- MOBOTIX TrueColor software
- Individual exp. control for each image sensor

Image Formats and Frame Rates

- Color 1280x960, 640x480, 320x240, 160x120
- Dual camera: 2560x960, 1280x480, 640x240
- Free image formats with zoom and panning (e.g. 1000x200 for skyline format)
- Image formats: JPEG, Motion JPEG, MxPEG, BMP
- Frame rate using MxPEG (320 x 240): 30 fps
- Frame rate using MxPEG (640 x 480): 30 fps
- Frame rate using MxPEG (1280 x 960): 10 fps
- Scheduled obscuring of image areas

Image Storage Included

- Internal image storage (up to 600 Mega, 2,500 VGA, 4,000 CIF images or 6 min. video)
- Event and time-controlled image storage
- Adj. number of pre- and post-alarm images
- Browser playback with event search features

Recording Included

- Integrated ring buffer recording by the camera on Windows or Linux file servers
- Event-controlled Snap Shot image recording in JPEG with pre- and post-alarm images
- Event-controlled MxPEG recording (video and audio) with 2.4 Mbps at 640x480 pixels

Video Management Included

- Ring buffer with up to 1 million alarms on the PC/server (no software installation or FTP!!!)
- Adjustable ring buffer size and delete time
- Image management with time/date search
- Definable MultiView for up to 30 cameras
- Freely definable function buttons
- MxControlCenter Windows client with Layout Editor

Event/Alarm Control Included

- Freely definable time functions/repeats
- Passive IR motion sensor, signal input
- Temperature, illumination, microphone volume
- Motion detection in definable video motion fields
- TCP/IP messages on IP ports (Ethernet and ISDN)

Alarm Signaling Included

- Signal output and sounds on camera speaker
- E-Mail or FTP via network or ISDN
- TCP/IP messages on IP ports (Ethernet and ISDN)
- Phone call (list & PIN test), with voice message

Audio SIP Telephony

- Integrated microphone and speaker
- ISDN telephony (with PIN test)
- Voice-over-IP to/from Windows PC
- Custom voice messages easily recorded
- Video IP telephony using SIP standard
- Automatic phone call on event/alarm
- Remote-control of camera from any phone
- Lip-synchronous audio recording (MxPEG)

Software Everything Included

- No software installation required
- Live images and admin. using web browser
- Complete video management software and recording integrated in camera software
- 4 simultaneous browser operating modes: HTML/JavaScript with M-JPEG, streaming (Java), ActiveX (MxPEG), PDA-optimized pages
- PDA interface with HTML-only pages
- Website updates via FTP, also using ISDN
- Several cameras in one browser window
- Simultaneous ISDN dial-in/dial-out using PPP
- Freely definable user groups and access rights

Power Supply 3 Watts

- Power supply injected into cable, fully concealed cabling
- Ethernet: 24...32V DC; 3W power consumption

Mechanics Maintenance-Free

- Fiber-reinforced housing (PBT-30GF), transparent and tinted dome included
- Weight: approx. 650 g (D12), 1.2 kg (wall mount)
- Dimensions (D12): Ø 201 x 110 mm (dia. x h)
- Dimensions (wall mount): 293 x 275 x 160 mm (w x d x h)

Characteristics

- Hardware resolution:
  Two 1280 x 960 CMOS, color and B/W
  Free software format with zoom/pan
- Frame/data rates for MxPEG video streaming (50% JPEG):

30 F/s	CIF (320x240)	1,2 Mbps
30 F/s	VGA (640x480)	2,4 Mbps
10 F/s	Mega (1280x960)	2,5 Mbps

- Day lens sensitivity (8 mm/2.0)
  1 Lux at 1/60 sec., 0.05 Lux at 1 sec.
- IR/Night lens sensitivity (8 mm/2.0)
  0.1 Lux at 1/60 sec, 0.005 Lux at 1 sec
- Audio codec
  64 Kbps ISDN and SIP (IP telephony)
- Temperature: -30° ... +60° C, IP65

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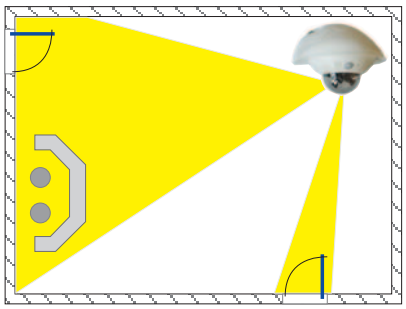
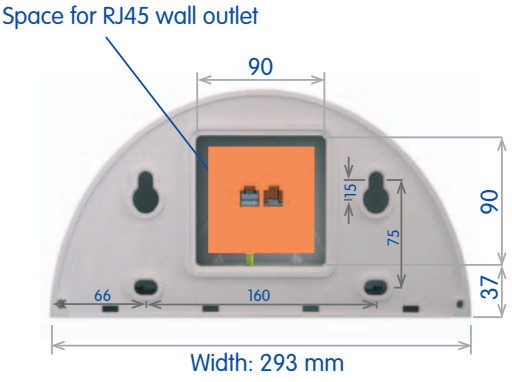


Optional: Outdoor wall mount with space for RJ45 wall outlet



L22 Super Wide-angle 90°	L32 Wide-angle	L43 Wide-angle	L65 Tele	L135 Tele
				
90° hor. x 67° vert. in 10 m: 20.0 x 13.3 m	60° hor. x 45° vert. in 10 m: 11.5 x 8.2 m	45° hor. x 34° vert. in 10 m: 8.2 x 6.1 m	31° hor. x 23° vert. in 10 m: 5.5 x 4.0 m	15° hor. x 11° vert. in 10 m: 2.6 x 1.9 m

MOBOTIX lenses

Overview D12D Standard Models (see price list for details)

- D12D-IT-D43D43: Indoor Dual color camera (VGA) for mounting to ceiling two color image sensors and L43 lenses
- D12D-IT-D22D22: Indoor Dual color camera (VGA) for mounting to ceiling **two Super Wide-Angle** lenses with comb. 180° field of vision
- D12D-IT-DNight-D43N43: Indoor Dual **Day/Night** color camera (VGA) for mounting to ceiling, one color, one B/W image sensor, L43 lenses
- D12D-Sec-D43D43: Indoor Dual color camera (**MEGA**) for mounting to ceiling two color image sensors and L43 lenses
- D12D-Sec-D22D22: Indoor Dual color camera (**MEGA**) for mounting to ceiling **two Super Wide-Angle** lenses with comb. 180° field of vision
- D12D-Sec-DNight-D43N43: Indoor Dual **Day/Night** color camera (**MEGA**) for mounting to ceiling, one color, one **B/W** image sensor, L43 lenses

Standard Delivery Includes

- D12D camera
  - Camera with two camera modules
  - One transparent, one tinted (50%) dome made of shock-resistant Polycarbonate
  - Ethernet cable 50 cm
- Outdoor wall mount (optional)
  - Wall mount made of 30% fiber-reinforced and shock-resistant PBT
  - Dowels and stainless steel screws

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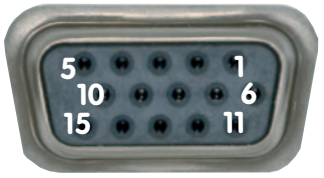
MX Interface Connector for Direct Connections

The MOBOTIX camera's MX Interface Connector (D Sub 15 HD) features **one signal input** and **one signal output for switching loads**. In addition, the interface also provides **two signal inputs and two signal outputs of the RS232 interface**. You can use the camera's signal input/output pins to detect an opening door (using a Reed switch) or to switch an external device (e.g. a lamp).

The interface connector also has **Line In/Out pins for external audio devices**. You can use the Line In pin to have the camera transmit and record external audio signals (e.g. from an external microphone with pre-amplifier). On the other hand, the camera can use the Line Out pin to transmit sound to external devices (e.g. an audio amplifier). This in turn offers new possibilities as the camera can feed external loudspeakers (such as announcement systems on a train station) or it can use external and more sensitive microphones that can be placed farther away from the camera (e.g. when using a MOBOTIX camera as a video conferencing system and in access control scenarios).

	Pin-out of MX Interface Connector D Sub 15 HD				
	PIN	**Signal**	**Alternative**	**Description**	**Remarks**
	5	GND		**Ground** for RS232, USB, Backup V-In	
Audio	4	Line-In +		**Audio input**, Line signal level $U_{RMS=1V}$	Galvanically isolated by transformer (DC decoupled)
	6	Line-In -			
	10	Line-Out +		**Audio output**, Line signal level $U_{RMS=1V}$	Galvanically isolated by transformer (DC decoupled)
	14	Line-Out -			
In/Out	9	In 1		**Signal input**, **active** < 0.5V, **Inactive** > +3V, max. voltage=24V	
	1	Out 1		**Signal output**, OpenCollector, **active** vs. GND, max. 24V/50mA, **inactive** 10kOhm vs. 3.3V	
USB	13	USB +5V		**Power supply** for USB devices 5V/100mA vs. GND	With backup power (12V) or PoE, 500mA also possible
	11	USB D+		**USB master data signals**, 0V to 3.3V	
	12	USB D-			
Serial interface	2	RxD	RxD-RS232	**active** = -3V to -12V, **inactive** = +3V to +12V	
			RxD I/O	**Signal input**, **inactive**: open or voltage > 3V, **active**: GND or voltage < 0V, max. ±12V	
	3	TxD	TxD RS232	**active** = -3V bis -12V, **inactive** = +3V to +12V	
			TxD I/O	**Signal output**, **inactive**: < -3V max. 3mA, **active**: > +3V max. 3mA, max. voltage = ±12V	While the system boots, the signal state is undefined
	7	RTS	RTS RS232	**active** = +3V to +12V, **inactive** = -3V to -12V	
			RTS I/O	**Signal output**, **inactive**: < -3V max. 3mA, **active**: > +3V max. 3mA, max. voltage = ±12V	While the system boots, the signal state is undefined
	8	CTS	CTS RS232	**active** = +3V to +12V, **inactive** = -3V to -12V	
			CTS I/O	**Signal input**, **inactive**: open or voltage > 3V, **active**: GND or voltage < 0V, max. ±12V	
	15	Backup V-In		**Backup power** 6V to 12V vs. GND, max. 1A	

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Hard- and Software Differences of the MOBOTIX D10/D12

To cut a long story short – nothing changes with the basic functionality or the looks of the camera. Users, who have worked with D10 models before will not have any problems adjusting to a MOBOTIX D12.

Changing to the three times faster **Intel "Bullverde" PXA270 processor with 520 MHz frequency** has boosted image processing considerably, providing notably higher frame rates (**up to 30 fps in VGA, up to 10 fps in MEGA resolution**). The new hardware also brings new features, such as SIP video (Internet telephony with video) and new possibilities for extending the hardware (SD card, CF slots, MX Interface Connector, USB master pins for MOBOTIX expansion modules, etc.).

The following table shows the most important differences in the hardware and software:

	MOBOTIX D10	MOBOTIX D12
Hardware Differences		
Serial interface	D Sub 9	**D Sub 15 HD**
Ethernet interface	10 Mbps	**10/100 Mbps**
USB connector	--	**USB master** on D Sub 15 D (for MOBOTIX expansion modules)
SD card*	--	**SD card** for extra storage
CF slots**	--	**CF slots** for MOBOTIX expansion modules (wireless, storage, ...)
Line In/Out pins for external audio devices	--	**External microphones/PA systems** via D Sub 15 HD
Backup power supply	--	**Backup power** (6 to 12 V, max. 1 A) on D Sub 15 HD
ISDN power supply	Power supply via ISDN NT	**Not** possible, but can be injected into 8-wire cable (**split cable and power supply or PoE required**
PoE power supply	MOBOTIX PoE products (MX-NPA + power supply / NPR-4/8/20	MOBOTIX PoE products **and standard PoE IEEE 802.3af**
Software Differences		
Frame rate (fps)	25 CIF • 12 VGA • 4 MEGA	**30 CIF • 30 VGA • 10 MEGA**
Image formats	CIF, VGA, VGA2, MEGA, User defined	CIF, VGA, VGA2, MEGA, **Panorama**, User defined
SIP video	--	**SIP video**

* Supported from Q3/2007

** Supported in future versions. CF cards are only installed at the factory!

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