

D12Di-Night Technical Specifications

Dual-FixDome Day&Night IP Camera



D12Di: 2.5 Megapixel IP Camera System

The **D12Di-Night** features two independent camera modules attached to movable swivel mounts, which provide for free positioning of the modules in almost any direction. Each camera module has 1280x960 pixels resolution. 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 D12Di-Night will automatically switch between the day and night camera modules—reliably and without any moving parts.

The **D12D** has a resolution of 1280 x 960 pixels, about twelve times as high as the CIF images of an analog camera. Digital zoom, digital panning, video motion detection, variable frame rates and freely selectable image sections reduce the storage requirements of the camera 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.

The Ethernet, ISDN and RS232 interfaces of the camera comply with current IT standards, including GSM/GPRS/UMTS (3G). Power to the indoor camera is supplied via the network cabling (Dual Power-Over-Ethernet). The **D12D** can be mounted to walls or ceilings with fully concealed cabling.

Highlights

- Dual image sensors (two lenses), one color, one IR-sensitive B/W
- 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 Servers
- Pre- & post-alarm image management
- 2.4 Mbps typical data rate (640 x 480)
- Power supply via network cable

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, 55° diagonal
- Optional: Super wide angle with 100° diagonal

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 digital zoom and pan/tilt (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 25 cameras
- Freely definable function buttons
- MxCC 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 and VoIP

- 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 (Pocket PC compatible)
- Website updates via FTP, also using ISDN
- Several cameras in one browser window
- Simultaneous ISDN dial-in/dial-out using PPP
- Three access levels (admin, user, guest)
- Configuration file for all parameters

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 domes included
- Weight: approx. 650 g
- Dimensions: Ø 201 x 106 mm (dia. x h)
- Temperature range: -20° to +50°C (-4° to +122°F)

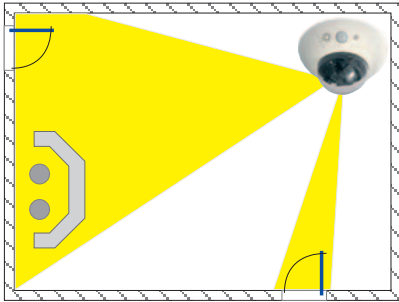
Characteristics

- 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: -20° ... +50° C, IP54

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Two freely positionable camera modules



Ethernet In/Out / RS232 ISDN



Microphone PIR sensor Speaker

Optional: Outdoor wall mount with space for RJ45 wall outlet

Wall mount and weather protection



Space for RJ45 wall outlet



	L22 Super Wide-angle 90°	L32 Wide-angle	L43 Wide-angle	L65 Tele	L135 Tele
MOBOTIX lenses					
	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

Overview D12Di Standard Models (see price list for details)

- D12Di-IT-D43D43: Indoor Dual color camera (VGA) for mounting to ceiling two color image sensors and L43 lenses
- D12Di-IT-D22D22: Indoor Dual color camera (VGA) for mounting to ceiling **two Super Wide-Angle** lenses with comb. 180° field of vision
- D12Di-IT-DNight-D43N43: Indoor Dual **Day/Night** color camera (VGA) for mounting to ceiling, one color, one B/W image sensor, L43 lenses
- D12Di-Sec-D43D43: Indoor Dual color camera (**MEGA**) for mounting to ceiling two color image sensors and L43 lenses
- D12Di-Sec-D22D22: Indoor Dual color camera (**MEGA**) for mounting to ceiling **two Super Wide-Angle** lenses with comb. 180° field of vision
- D12Di-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

- D12Di 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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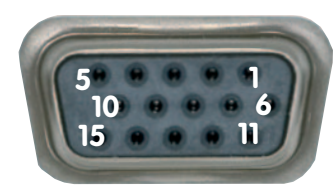


MX Interface Connector for Direct Connections

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		
Ethernet interface	10 Mbps	10/100 Mbps
Serial interface	D Sub 9	D Sub 15 HD
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!