

# FLEXIDOME IP outdoor 4000

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Invented for life



HD ONVIF



- ▶ Outdoor IP dome camera with varifocal lens
- ▶ 720p resolution for sharp images
- ▶ Fully configurable quad streaming
- ▶ Regions of interest and E-PTZ
- ▶ IR version with 15 m (50 ft) viewing distance

The 720P outdoor dome camera from Bosch is a professional surveillance camera that provides high quality HD images for demanding security and surveillance network requirements. This robust dome is a true day/night camera offering excellent performance day or night.

The camera is also available with a built-in active infrared illuminator that provides high performance in extreme low-light environments.

## Functions

### Intelligent Dynamic Noise Reduction reduces bandwidth and storage requirements

The camera uses Intelligent Dynamic Noise Reduction which actively analyzes the contents of a scene and reduces noise artifacts accordingly.

The low-noise image and the efficient H.264 compression technology provide clear images while reducing bandwidth and storage by up to 50% compared to other H.264 cameras. This results in reduced-bandwidth streams that still retain a high image quality and smooth motion. The camera provides the most usable image possible by cleverly optimizing the detail-to-bandwidth ratio.

### Area-based encoding

Area-based encoding is another feature which reduces bandwidth. Compression parameters for up to eight user-definable regions can be set. This allows uninteresting regions to be highly compressed, leaving more bandwidth for important parts of the scene.

### Bitrate optimized profile

The average typical optimized bandwidth in kbits/s for various image rates is shown in the table:

fps	720p	480p
30	1200	600
15	955	478
12	877	438
5	568	284
2	245	122

### Vandal resistant outdoor dome with varifocal lens

Ideal for outdoor use, the IK10-rated design is suitable for installations where a vandal resistance is important. The camera is protected against water and dust to IP66 (NEMA Type 4X) standards. The 3 to 10 mm varifocal lens allows you to choose the

coverage area to best suit your application. Mounting options are numerous, including surface, wall, and suspended-ceiling mounting.

### Multiple streams

The innovative multi-streaming feature delivers various H.264 streams together with an M-JPEG stream. These streams facilitate bandwidth-efficient viewing and recording as well as integration with third-party video management systems.

### Regions of interest and E-PTZ

Regions of Interest (ROI) can be user defined. The remote E-PTZ (Electronic Pan, Tilt and Zoom) controls allow you to select specific areas of the parent image. These regions produce separate streams for remote viewing and recording. These streams, together with the main stream, allow the operator to separately monitor the most interesting part of a scene while still retaining situational awareness.

### Two-way audio and audio alarm

Two-way audio allows the operator to communicate with visitors or intruders via an external audio line input and output. Audio detection can be used to generate an alarm if needed.

### Tamper and motion detection

A wide range of configuration options is available for alarms signaling camera tampering. A built-in algorithm for detecting movement in the video can also be used for alarm signaling.

### Edge recording

The microSD card slot supports up to 2 TB of storage capacity. A microSD card can be used for local alarm recording. Pre-alarm recording in RAM reduces recording bandwidth on the network, or – if microSD card recording is used – extends the effective life of the storage medium.

### Cloud-based services

The camera supports time-based or alarm-based JPEG posting to four different accounts. These accounts can address FTP servers or cloud-based storage facilities (for example, Dropbox). Video clips or JPEG images can also be exported to these accounts.

Alarms can be set up to trigger an e-mail or SMS notification so you are always aware of abnormal events.

### Easy installation

Power for the camera can be supplied via a Power-over-Ethernet compliant network cable connection. With this configuration, only a single cable connection is required to view, power, and control the camera. Using PoE makes installation easier and more cost-effective, as cameras do not require a local power source.

The camera can also be supplied with power from +12 VDC power supplies. To increase system reliability, the camera can be simultaneously connected to both PoE and +12 VDC supplies.

Additionally, uninterruptible power supplies (UPS) can be used to ensure continuous operation, even during a power failure.

For trouble-free network cabling, the camera supports Auto-MDIX which allows the use of straight or cross-over cables.

### True day/night switching

The camera incorporates mechanical filter technology for vivid daytime color and exceptional night-time imaging while maintaining sharp focus under all lighting conditions.

### Access security

Password protection with three levels and 802.1x authentication is supported. To secure Web browser access, use HTTPS with a SSL certificate stored in the camera. The video and audio communication channels can be independently AES encrypted with 128-bit keys by installing the optional encryption site license.

### Complete viewing software

There are many ways to access the camera's features: using a web browser, with the Bosch Video Management System, with the free-of-charge Bosch Video Client, with the video security mobile app, or via third-party software.

### Video security App

The Bosch video security mobile App has been developed to enable **Anywhere** access to HD surveillance images allowing you to view live images from any location. The App is designed to give you complete control of all your cameras, from panning and tilting to zoom and focus functions. It's like taking your control room with you.

This App, together with the separately available Bosch transcoder, will allow you to fully utilize our dynamic transcoding features so you can play back images even over low-bandwidth connections.

### System integration

The camera conforms to the ONVIF Profile S specification. Compliance with this standard guarantees interoperability between network video products regardless of manufacturer.

Third-party integrators can easily access the internal feature set of the camera for integration into large projects. Visit the Bosch Integration Partner Program (IPP) website ([ipp.boschsecurity.com](http://ipp.boschsecurity.com)) for more information.

## Certifications and approvals

### HD standards

Complies with the SMPTE 296M-2001 Standard in:

- Resolution: 1280x720
- Scan: Progressive
- Color representation: complies with ITU-R BT.709
- Aspect ratio: 16:9
- Frame rate: 25 and 30 frames/s

<b>Standards</b>	IEC 62471 (IR)
	EN 60950-1
	UL 60950-1
	UL 60950-22
	CAN/CSA-C22.2 NO. 60950-1-03
	CAN/CSA-C22.2 NO. 60950-22
	EN 50130-4
	EN 50130-5
	FCC Part15 Subpart B, Class B
	EMC directive 2004/108/EC
	EN 55022 class B
	EN 55024
	AS/NZS CISPR 22 (equal to CISPR 22)
	ICES-003 Class B
	VCCI J55022 V2/V3
	EN 50121-4
<b>ONVIF compliance</b>	EN 50132-5-2; IEC 62676-2-3
<b>Product certifications</b>	CE, FCC, UL, cUL, C-tick, CB, VCCI

Ingress protection	IP66
Impact protection	IK10

Region	Certification
Europe	CE
USA	UL
	FCC
Canada	CSA

### Technical specifications

Power	
Input voltage	+12 VDC or Power-over-Ethernet (48 VDC nominal)
Power consumption	4.5 W max. 6.0 W max. (IR version)
PoE	IEEE 802.3af (802.3at Type 1) Power level: Class 1 (Class 2 for IR version)

Sensor	
Sensor type	1/2.7-inch CMOS
Total sensor pixels	1952 x 1092 (2MP)

Video performance	
Sensitivity – (3200K, reflectivity 89%, F1.3, 30IRE)	
• Color	0.24 lx
• Mono	0.05 lx
• With IR	0.0 lx
Dynamic range	76 dB Wide Dynamic Range (WDR)

Video streaming	
Video compression	H.264 (MP); M-JPEG
Streaming	Multiple configurable streams in H.264 and M-JPEG, configurable frame rate and bandwidth. Regions of Interest (ROI)
Overall IP Delay	Min. 120 ms, Max. 340 ms
GOP structure	IP, IBP, IBBP
Encoding interval	1 to 25 [30] ips

Video resolution (H x V)	
720p HD	1280 x 720
1.3 MP (4:3)	1280 x 960
Upright 9:16 (cropped)	400 x 720
D1 4:3 (downscaled/cropped)	704 x 480
480p SD	Encoding: 704 x 480; Displayed: 854 x 480
432p SD	768 x 432
288p SD	512 x 288
240p SD	Encoding: 352 x 240; Displayed: 432 x 240
144p SD	256 x 144

Video functions	
Day/Night	Color, Monochrome, Auto
Adjustable picture settings	Contrast, Saturation, Brightness
White Balance	3 automatic modes, manual mode and measure

Video functions	
Shutter	Automatic Electronic Shutter (1/25[30] to 1/150000) Fixed shutter (1/25[30] to 1/15000) selectable
Backlight compensation	On/off
Noise reduction	Intelligent Dynamic Noise Reduction
Contrast enhancement	On/off
Sharpness	Sharpness enhancement level selectable
Privacy Masking	Four independent areas, fully programmable
Video Analysis	MOTION+
Other functions	Image mirror, Image flip, Pixel counter, Video watermarking, Display stamping, Scene modes

Night vision (IR version only)	
Distance	15 m (50 ft)
LED	15 LED high efficiency array, 850 nm

Optical	
Lens type	Varifocal 3 to 10 mm, DC Iris F1.3 – 360, IR corrected
Lens mount	Board mounted
Horizontal field of view	36° - 117°
Vertical field of view	20° - 61°

Input/output	
Analog video output	CVBS, 1 Vpp, BNC connector, 75 Ohm Selectable standard
Alarm input	Short or DC 5V activation
Relay out	Input rating Maximum 1 A, 24 VAC/VDC
Audio input	Line in jack connector
Audio output	Line out jack connector

Audio streaming	
Audio Streaming	Full duplex / half duplex
Signal-to-noise ratio	> 50 dB
Audio compression	AAC-LC, G.711, L16 (live and recording)

Local storage	
Internal RAM	10 s pre-alarm recording
Memory card slot	Supports up to 32 GB microSDHC / 2 TB microSDXC card. (An SD card of Class 6 or higher is recommended for HD recording)
Recording	Continuous recording, ring recording, alarm/ events/schedule recording

Software	
Unit discovery	IP Helper
Unit configuration	Via web browser or Configuration Manager
Firmware update	Remotely programmable
Software viewing	Web browser; Video Security Client; Video Security App; Bosch Video Management System; Bosch Video Client; or third party software
Latest firmware and software	<a href="http://downloadstore.boschsecurity.com/">http://downloadstore.boschsecurity.com/</a>

Network	
Protocols	IPv4, IPv6, UDP, TCP, HTTP, HTTPS, RTP/ RTCP, IGMP V2/V3, ICMP, ICMPv6, RTSP, FTP, Telnet, ARP, DHCP, APIPA (Auto-IP, link local address), NTP (SNTP), SNMP (V1, MIB-II), 802.1x, DNS, DNSv6, DDNS (DynDNS.org, selfHOST.de, no-ip.com), SMTP, iSCSI, UPnP (SSDP), DiffServ (QoS), LLDP, SOAP, Dropbox, CHAP, digest authentication
Encryption	TLS 1.0, SSL, DES, 3DES
Ethernet	10/100 Base-T, auto-sensing, half/full duplex
Connectivity	Auto-MDIX
Interoperability	ONVIF Profile S; GB/T 28181

Mechanical	
3-axis adjustment (pan/tilt/rotation)	350° / 130° / 350°
Dimensions	Diameter: 145 mm (5.72 in) Height: 118 mm (4.66 in)
Weight	1050 g (2.32 lb) approx.
Color	RAL 9004, RAL 9010

**Environmental**

Operating temperature	-30 °C to +50 °C (-22 °F to +122 °F) for continuous operation; -34 °C to +74 °C (-30 °F to +165 °F) according to NEMA TS 2-2003 (R2008), para 2.1.5.1 using fig. 2.1 test profile
Storage temperature	-30 °C to +70 °C (-22 °F to +158 °F)
Humidity	20% to 90% relative humidity (non condensing)

**Ordering information****FLEXIDOME IP outdoor 4000 HD**

Vandal-resistant IP dome camera for outdoor HD surveillance. Varifocal 3 to 10 mm f1.3 lens; IP66; IK10; IDNR; day/night; H.264 quad-streaming; cloud services; ROI; motion/tamper/audio detection; 720p  
Order number **NDN-40012-V3**

**FLEXIDOME IP outdoor 4000 IR**

Vandal-resistant IP dome camera for outdoor HD surveillance. Varifocal 3 to 10 mm f1.3 lens; IP66; IK10; IDNR; day/night; H.264 quad-streaming; cloud services; ROI; motion/tamper/audio detection; 720p; Infrared  
Order number **NDI-40012-V3**

**Accessories****NDA-LWMT-DOME Dome Wall Mount**

Sturdy wall L-shaped bracket for dome cameras  
Order number **NDA-LWMT-DOME**

**VDA-WMT-AODOME Outdoor Wall Mount**

Sturdy outdoor wall mount bracket for dome cameras (Ø166 mm)  
Order number **VDA-WMT-AODOME**

**VDA-PMT-AODOME Outdoor Pipe Mount**

Sturdy outdoor pipe mount bracket for dome cameras (Ø166 mm)  
Order number **VDA-PMT-AODOME**

**LTC 9213/01 Pole Mount Adapter**

Flexible pole mount adapter for camera mounts (use together with the appropriate wall mount bracket). Max. 9 kg (20 lb); 3 to 15 inch diameter pole; stainless steel straps  
Order number **LTC 9213/01**

**NDA-FMT-DOME In-ceiling mount**

In-ceiling flush mounting kit for dome cameras (Ø157 mm)  
Order number **NDA-FMT-DOME**

**NDA-ADT4S-MINDOME 4S Surface Mount Box**

Surface mount box (Ø145 mm / Ø5.71 in) for dome cameras (use together with the appropriate dome adapter bracket).  
Order number **NDA-ADT4S-MINDOME**

**NDA-SMB-MINISMB Surface Mount Box**

Surface mount box (Ø149 mm / Ø5.87 in)  
Order number **NDA-SMB-MINISMB**

**VDA-PLEN-DOME In-ceiling Housing for Plenums Kit**

FLEXIDOME in-ceiling housing installation kit (plenum-rated) for various FLEXIDOME cameras  
Order number **VDA-PLEN-DOME**

**Software Options****BVIP AES 128 Bit Encryption**

Site licence for BVIP AES 128-bit encryption. Enables encrypted communication between BVIP devices and management stations  
Order number **MVS-FENC-AES**

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