

# FLEXIDOME IP micro 2000

[www.boschsecurity.com](http://www.boschsecurity.com)**BOSCH**

Invented for life

**HD ONVIF**

- ▶ Compact and stylish indoor IP microdome
- ▶ 720p or VGA resolutions at 30 images per second
- ▶ MicroSD card slot for edge recording
- ▶ Motion, tamper and audio detection
- ▶ FTP, Dropbox and e-mail alarms

The 720p and VGA indoor microdome cameras from Bosch are ready-to-use, complete network video surveillance systems inside a compact microdome. These cameras bring Bosch's high-performance technology into the realm of homes, small office and retail businesses by offering a cost-effective solution for a broad range of applications.

## System overview

### Compact and stylish design

Ideal for indoor use, the compact aesthetic design is suitable for installations where housing size and appearance are important. Mounting options are numerous, including surface, wall, and suspended-ceiling mounting.

## 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

### 720p or VGA resolutions with multiple streams

The camera is available in 720p or VGA resolutions at 30 images per second (ips). 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.

#### **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.

#### **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.

#### **Built-in microphone and audio alarm**

The camera has a built-in microphone to allow operators to listen in on the monitored area. Audio detection can be used to generate an alarm if needed.

#### **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/24 VDC power supplies. To increase system reliability, the camera can be simultaneously connected to both PoE and +12 VDC/24 VDC supplies. Additionally, uninterruptible power supplies (UPS) can be used, which will allow continuous operation, even during a power failure.

#### **3-axis adjustment**

The 3-axis adjustment allows easy installation on a wall or a ceiling with a precise field of view.

#### **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.

#### **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, ONVIF Profile Q and ONVIF Profile G specifications. Compliance with these standards 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**

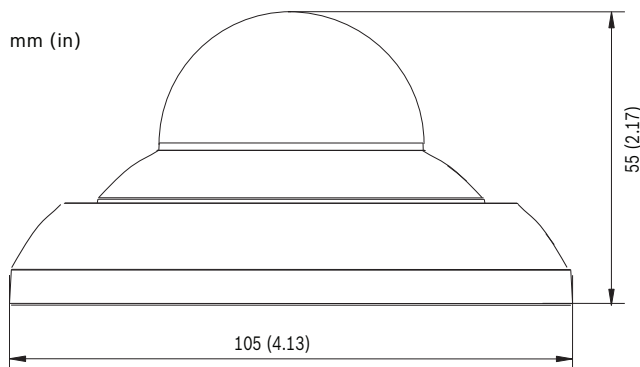
Complies with the SMPTE 296M-2001 Standard in:

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

Standards	EN 60950-1
	UL 60950-1
	CAN/CSA-C22.2 NO. 60950-1-07
	EN 50130-4; EN 50130-5
	FCC Part15 Subpart B, Class B
	EMC directive 2004/108/EC
	EN 55022 class B
	EN 55024
	VCCI J55022 V2/V3
	AS/NZS CISPR 22 (equal to CISPR 22)
	ICES-003 Class B
	EN 50121-4; EN 50121-3-2

<b>ONVIF compliance</b>	EN 50132-5-2; IEC 62676-2-3
<b>Product certifications</b>	CE, FCC, UL, cUL, C-tick, CB, VCCI
<b>Region</b>	<b>Certification</b>
Europe	CE
USA	UL
Canada	CSA

### Installation/configuration notes



### Parts included

	Item
1x	FLEXIDOME IP micro 2000 camera
1x	Allen key
2x	Mounting screws with wall plugs
1x	Quick Install Guide
1x	Identification label sheet

### Technical specifications

<b>Power</b>	
Input voltage	+12 VDC to +24 VDC (10% tolerance) or Power-over-Ethernet (48 VDC nominal)
Power consumption	3.84 W max. (720p version); 2.8 W max. (VGA version)
PoE	IEEE 802.3af (802.3at Type 1); Power level: Class 1

### Video

Sensor type	1/4-inch CMOS
Effective pixels	1280 x 720 (720p version) 640 x 480 (VGA version)

Sensitivity (3200 K, reflectivity 89%, F2.8, 30IRE)	1.0 lx
Dynamic range	76 dB
Electronic Day/Night	Auto, Color, Monochrome
Shutter speed	Automatic Electronic Shutter (AES) Fixed (1/30 [1/25] to 1/15000)
Video resolution	720p, 480p, 432p, 288p, 240p, 144p (720p version) 480p, 240p (VGA version)
Video compression	H.264 MP (Main Profile); M-JPEG
Max. frame rate	30 ips (M-JPEG frame rate can vary depending on system loading)
Video Settings	Video watermarking, Alarm mode stamping, Image mirror, Image flip, Contrast, Saturation, Brightness, White balance, Backlight Compensation, Privacy Mask, Motion detection, Tamper alarm, Audio alarm, Pixel counter

### Lens

Lens type	2.5 mm fixed, F2.8
Lens mount	Board mounted
View angle (H x V)	89° x 50° (720p version) 66.7° x 50° (VGA version)

### Audio streaming

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

Audio input	Built-in microphone
-------------	---------------------

### 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 Configuration	Via web browser or Configuration Manager
Firmware update	Remotely programmable
Software viewer	Web browser, Bosch Video Client, or third party software

**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 1.2, SSL, DES, 3DES
Ethernet	10/100 Base-T, auto-sensing, half/full duplex
Connectivity	Auto-MDIX
Interoperability	ONVIF Profile S; ONVIF Profile G ; ONVIF Profile Q GB/T 28181

**Mechanical**

3-axis adjustment (pan/tilt/rotation)	±175° / ±70° / ±180°
Dimensions	Diameter: 105 mm (4.13 in) Height: 55 mm (2.17 in)
Weight	250 g (8.81 oz) approx.
Color	RAL 9017, RAL 9003

**Environmental**

Operating temperature	-20 °C to +50 °C (-4 °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	-20 °C to +70 °C (-4 °F to +158 °F)
Humidity	0% to 95% relative humidity (non condensing)

**Ordering information**
**FLEXIDOME IP micro 2000 HD**

Cost-effective, ready-to-use, IP microdome surveillance camera for indoor use. MicroSD card slot; microphone; 2.5 mm lens; IDNR; motion/tamper/audio detection; cloud services; free viewing Apps; 720p30  
Order number **NUC-21012-F2**

**FLEXIDOME IP micro 2000**

Cost-effective, ready-to-use, IP microdome surveillance camera for indoor use. MicroSD card slot; microphone; 2.5 mm lens; IDNR; motion/tamper/audio detection; cloud services; free viewing Apps; VGA  
Order number **NUC-21002-F2**

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

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

**NDA-WMT4S-MICDOME Microdome 4S Mount**

Sturdy wall mount bracket for microdome cameras (Ø110 mm)

Order number **NDA-WMT4S-MICDOME**

**NPD-5001-POE Midspan PoE Injector**

Power-over-Ethernet midspan injector for use with PoE enabled cameras; 15.4 W, 1-port

Order number **NPD-5001-POE**

**NPD-5004-POE Midspan PoE Injector**

Power-over-Ethernet midspan injectors for use with PoE enabled cameras; 15.4 W, 4-ports

Order number **NPD-5004-POE**

**Represented by:**

**North America:**

Bosch Security Systems, Inc.  
130 Perinton Parkway  
Fairport, New York, 14450, USA  
Phone: +1 800 289 0096  
Fax: +1 585 223 9180  
security.sales@us.bosch.com  
www.boschsecurity.us

**Europe, Middle East, Africa:**

Bosch Security Systems B.V.  
P.O. Box 80002  
5617 BA Eindhoven, The Netherlands  
Phone: + 31 40 2577 284  
Fax: +31 40 2577 330  
emea.securitysystems@bosch.com  
www.boschsecurity.com

**Asia-Pacific:**

Robert Bosch (SEA) Pte Ltd, Security  
Systems  
11 Bishan Street 21  
Singapore 573943  
Phone: +65 6571 2808  
Fax: +65 6571 2699  
apr.securitysystems@bosch.com  
www.boschsecurity.asia

**China:**

Bosch (Shanghai) Security Systems Ltd.  
203 Building, No. 333 Fuquan Road  
North IBP  
Changning District, Shanghai  
200335 China  
Phone +86 21 22181111  
Fax: +86 21 22182398  
www.boschsecurity.com.cn

**Latin America and Caribbean:**

Robert Bosch Ltda Security Systems Division  
Via Anhanguera, Km 98  
CEP 13065-900  
Campinas, Sao Paulo, Brazil  
Phone: +55 19 2103 2860  
Fax: +55 19 2103 2862  
latam.boschsecurity@bosch.com  
www.boschsecurity.com