

TINYON IP 2000 PIR

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Invented for life



- ▶ Compact and stylish 720p indoor IP camera
- ▶ PIR-based motion and audio detection
- ▶ Integrated white light for night time viewing
- ▶ FTP, Dropbox and e-mail alarms
- ▶ SD card slot for local recording

The 720p indoor microbox cameras with passive infrared (PIR) motion detector are ready-to-use, complete network video surveillance systems inside a compact and stylish housing. 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

Ideal for indoor use, the compact, aesthetic design is suitable for installations where housing size and appearance are important. The camera is available in two colors and is supplied with a versatile mounting bracket, allowing it to be easily positioned for best coverage.

Functions

Motion and audio detection

The built-in passive infrared (PIR) sensor detects motion within 5 meters, even in complete darkness. It can then trigger an alarm, start recording or switch on the integrated white light LED to provide illumination

in darkened rooms. These functions can also be activated by the detection of sound by the built-in microphone.

Built-in microphone and loudspeaker

The built-in microphone and loudspeaker allows remote users to listen in on an area and communicate messages to visitors or intruders via the loudspeaker. Audio detection can be used to generate an alarm if needed.

Intelligent Dynamic Noise Reduction

Quiet scenes with little or no movement require a lower bitrate. By intelligently distinguishing between noise and relevant information, Intelligent Dynamic Noise Reduction reduces bitrate by up to 50%. Because noise is reduced at the source during image capture, the lower bitrate does not compromise on video quality.

With Intelligent Dynamic Noise Reduction, our focus is to significantly reduce storage costs, and lessen network strain by only using bandwidth when needed.

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 |

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.

Depending on the resolution and frame rate selected for the first stream, the second stream provides a copy of the first stream or a lower resolution stream.

The third stream uses the I-frames of the first stream for recording; the fourth stream shows a JPEG image at a maximum of 10 Mbit/s.

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 SD card slot supports up to 2 TB of storage capacity. An SD card can be used for local alarm recording. Pre-alarm recording in RAM reduces recording bandwidth on the network, or – if SD 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

The power supply adapter delivered with the camera provides the 5 VDC power supply required. The camera can also be supplied via a Power-over-Ethernet (IEEE 802.3af) compliant network cable connection.

With this configuration, only a single cable connection is required to view, power, and control the camera. To increase system reliability, the camera can be simultaneously connected to both PoE and 5 VDC supplies.

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 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) 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 61000-3-2 |
| | EN 61000-3-3 |
| | EN 55024 |
| | VCCI J55022 V2/V3 |
| | AS/NZS CISPR 22 (equal to CISPR 22) |
| | ICES-003 Class B |
| ONVIF conformance | EN 50132-5-2; IEC 62676-2-3 |
| Product certifications | CE, FCC, UL, cUL, C-tick, CB, VCCI |

| Region | Certification |
|--------|---------------|
| Europe | CE |
| USA | UL |

Installation/configuration notes

Parts included

| | Item |
|----|---------------------------------|
| 1x | TINYON camera |
| 1x | Power adapter |
| 1x | Mounting bracket |
| 2x | Mounting screws with wall plugs |
| 1x | Quick Install Guide |
| 1x | Identification label sheet |

Technical specifications

| | |
|--|--|
| Power | |
| Power Supply | +5 VDC via supplied power adapter; Power-over-Ethernet 48 VDC nominal |
| Power Consumption | 3.7 W |
| PoE | IEEE 802.3af (802.3at Type 1) Power level: Class 1 |
| Power adapter | 100-240 VAC to +5 VDC power supply included |
| Sensor | |
| Type | 1/4-inch CMOS |
| Total sensor pixels | 1280 x 800 (1MP) |
| Video performance – Sensitivity (3200K, 89% reflectivity, 30IRE, F2.8) | |
| Sensitivity | 1.0 lx 0.0 lx (with LED) |

| | |
|-----------------------------------|---|
| Video performance - Dynamic range | |
| Dynamic range | 76 dB |
| Video streaming | |
| Video compression | H.264 (MP); M-JPEG |
| Streaming | Multiple configurable streams in H.264 and M-JPEG, configurable frame rate and bandwidth. |
| Overall IP Delay | Min. 120 ms, Max. 340 ms |
| GOP structure | IP, IBP, IBBP |
| Encoding interval | 1 to 30 ips |

| | |
|-----------------------------|--|
| Video resolution (H x V) | |
| 720p HD | 1280 x 720 (at 30 ips) |
| 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 | |
| Adjustable picture settings | Contrast, Saturation, Brightness |
| White Balance | Standard automatic mode, manual mode and hold |
| Shutter | Automatic Electronic Shutter (1/30 to 1/150000) Fixed shutter (1/30 to 1/15000) selectable |
| Backlight compensation | On/off |
| Noise reduction | Intelligent Dynamic Noise Reduction |
| Privacy Masking | Four independent areas, fully programmable |
| Video Analysis | MOTION+ |
| Other functions | Image mirror, Image flip, Pixel counter, Video watermarking, Display stamping, Motion detection, Tamper alarm, Audio alarm |

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

| Input/output | |
|--------------------------|-----------------------------------|
| Audio input | Built-in microphone |
| Audio output | Built-in loudspeaker |
| Alarm input | 1 input |
| Alarm activation voltage | 0 to 3.3 VDC active low, or short |
| Alarm output | 1 output |
| Alarm output voltage | +5 VDC Load current 1 A max. |

| Detection | |
|-----------------|------------------------|
| Detector | PIR (passive infrared) |
| Distance | 5 m (16 ft) |
| Detection angle | 90° (H) |

| Night vision | |
|--------------|-----------------|
| Distance | 4 m (13 ft) |
| Illumination | White light LED |

| Optical | |
|--------------------------|--------------------|
| Lens type | Fixed 2.5 mm, F2.8 |
| Lens mount | Board mounted |
| Horizontal field of view | 89° |
| Vertical field of view | 50° |

| 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, 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, AES (optional) |
| Ethernet | 10/100 Base-T, auto-sensing, half/full duplex |
| Connectivity | ONVIF Profile S, Auto-MDIX |

| Mechanical | |
|------------------------|--|
| Dimensions (H x W x D) | 109 x 65 x 47 mm (4.29 x 2.56 x 1.85 in) |
| Weight | 105 g (3.70 oz) |

| Environmental | |
|-----------------------|--|
| Operating Temperature | -10 °C to +45 °C (14 °F to +113 °F) |
| Storage Temperature | -20 °C to +70 °C (-4 °F to +158 °F) |
| Humidity | 0% to 95% relative humidity (non condensing) |

Ordering information

TINYON IP 2000 PIR

Cost-effective, ready-to-use, IP microbox camera with PIR for indoor surveillance. 720p30; microSD card slot; 2.5 mm lens; +5 VDC PSU; motion/audio detection; cloud services; free viewing Apps; IDNR; PIR; black
Order number **NPC-20012-F2L**

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Cost-effective, ready-to-use, IP microbox camera with PIR for indoor surveillance. 720p30; microSD card slot; 2.5 mm lens; +5 VDC PSU; motion/audio detection; cloud services; free viewing Apps; IDNR; PIR; white
Order number **NPC-20012-F2L-W**

Represented by:

Americas:

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

America Latina:

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