

# TINYON IP 2000 WI

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Invented for life



- ▶ Compact and stylish 720p indoor wireless LAN camera
- ▶ IEEE 802.11b/g/n wireless connectivity
- ▶ WPS for easy wireless network setup
- ▶ Built-in PIR motion detector and white light illuminator
- ▶ FTP, Dropbox and e-mail alarms

The 720p indoor microbox cameras with WiFi and a 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.

The wireless connectivity, with no external antenna, further enhances the aesthetic nature of the installation and also removes the need for a network cable.

## Functions

### Integrated wireless connection

The integrated wireless LAN feature supports the IEEE 802.11b, g and n standards allowing the camera to connect to fast WiFi access points. The WPS button provides an easy and simple way to set up the wireless LAN connection and security settings.

### 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.

### Easy installation

The power supply adapter delivered with the camera provides the +5 VDC power supply required. The wireless connectivity removes the need for a network cable, however, an Ethernet compliant network cable can be connected if required. The WPS button simplifies the selection of a WiFi network and the network password setting.

### 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.

### 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.

### 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](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 |
|           | FCC Part15 Subpart B, Class B                        |

|                               |                             |
|-------------------------------|-----------------------------|
|                               | FCC Part15 Subpart C        |
|                               | EMC directive 2004/108/EC   |
|                               | EMC directive 1999/5/EC     |
|                               | EN 300 328                  |
|                               | EN 301 489-1-17             |
|                               | EN 62311                    |
|                               | EN 50130-4                  |
|                               | EN 50130-5                  |
|                               | EN 55022 class B            |
|                               | EN 55024                    |
|                               | EN 61000-3-2                |
|                               | EN 61000-3-3                |
|                               | SRRC China                  |
| <b>ONVIF conformance</b>      | EN 50132-5-2; IEC 62676-2-3 |
| <b>Product certifications</b> | CE, FCC, UL, cUL, CB        |

| 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 Consumption   | 4.4 W typical                               |
| 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<br>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;<br>Displayed: 854 x 480 |
| 432p SD                     | 768 x 432                                    |
| 288p SD                     | 512 x 288                                    |
| 240p SD                     | Encoding: 352 x 240;<br>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)<br>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          |   |
|--------------------------|---|
| Standard                 | G.711, 8 kHz sampling rate<br>L16, 16 kHz sampling rate<br>AAC-LC, 48 kbps at 16 kHz sampling rate<br>AAC-LC, 80 kbps at 16 kHz sampling rate |
| Signal-to-Noise Ratio    | >50 dB  |
| Audio Streaming          | Full-duplex / half duplex   |
| 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<br>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°   |
| Software                 |   |
| Unit Configuration       | Via web browser or Configuration Manager  |
| Firmware update          | Remotely programmable   |
| Software viewer          | Web browser, Bosch Video Client, or third party software  |
| Wireless LAN             |   |
| Wireless standard        | IEEE 802.11b/g/n  |
| Wireless security        | WPA-PSK (TKIP), WPA2-PSK (AES)  |
| WiFi protected setup     | WPS button, PIN   |

| 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 +40 °C (14 °F to +104 °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 WI

Cost-effective, ready-to-use, wireless LAN microbox camera with PIR for indoor surveillance. 720p30; 2.5 mm lens; +5 VDC PSU; motion/audio detection; cloud services; free viewing Apps; IDNR; PIR; wireless LAN; black  
Order number **NPC-20012-F2WL**

#### TINYON IP 2000 WI

Cost-effective, ready-to-use, wireless LAN microbox camera with PIR for indoor surveillance. 720p30; 2.5 mm lens; +5 VDC PSU; motion/audio detection; cloud services; free viewing Apps; IDNR; PIR; wireless LAN; white  
Order number **NPC-20012-F2WL-W**

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