The 1080p HD indoor camera is a ready-to-use, complete network video surveillance system inside a compact and stylish housing. This camera brings 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

The elegant, compact box design is ideal for homes, offices, businesses or shops where camera size and appearance is important. The camera has a 1/2.7-inch CMOS HD sensor and is a true day/night camera offering excellent performance day or night.

Functions

Content Based Imaging Technology
Content Based Imaging Technology (CBIT) is used to radically improve image quality in all lighting conditions and to identify areas for enhanced processing. The camera examines the scene using intelligent video analytics and provides feedback to re-tune the image processing. This provides better detail in the areas that matter and better all-round performance.

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

<table>
<thead>
<tr>
<th>IPS</th>
<th>1080p</th>
<th>720p</th>
<th>480p</th>
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<tbody>
<tr>
<td>30</td>
<td>1600</td>
<td>1200</td>
<td>600</td>
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<td>15</td>
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<tr>
<td>2</td>
<td>326</td>
<td>245</td>
<td>122</td>
</tr>
</tbody>
</table>
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.

An upright mode can be selected for the second stream. In this mode an image of 400 x 720 (9:16 aspect ratio) is cropped from the full sensor image. When the scene to be monitored is suitable to this mode, the bandwidth and storage requirements are reduced.

Simultaneous analog and IP video outputs
A surge-protected analog video output ensures that high resolution IP video streaming and an analog video output are available simultaneously. This means, for example, that a confrontation monitor can easily be connected directly to the camera while still maintaining full IP functionality.

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.

Built-in microphone, two-way audio and audio alarm
The camera has a built-in microphone to allow operators to listen in on the monitored area. 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 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.

Storage management
Recording management can be controlled by the Bosch Video Recording Manager (VRM) or the camera can use iSCSI targets directly without any recording software.

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 crossover cables.

Simple set-up
The camera has a very intuitive user interface that allows fast and easy configuration. Six configurable user modes are provided with the best settings for a variety of applications:

- **Indoor** – general day-to-night changes without sun highlights and street lighting
- **Outdoor** – general day-to-night changes with sun highlights and street lighting
- **Motion** – monitoring traffic or fast moving objects; motion artifacts are minimized
- **Lowlight** – optimized for sufficient details at low light.
- **BLC** – for people moving in front of a bright background
- **Vibrant** – enhanced contrast, sharpness and saturation

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.
**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) for more information.

**Certifications and approvals**

**HD standards**
Complies with the SMPTE 274M-2008 Standard in:
- Resolution: 1920x1080
- Scan: Progressive
- Color representation: complies with ITU-R BT.709
- Aspect ratio: 16:9
- Frame rate: 25 and 30 frames/s

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

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<td>EMC directive 2004/108/EC</td>
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<tr>
<td>EN 55022 class B</td>
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</tbody>
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Parts included

Technical specifications

Power
- Power Supply: 12 VDC
- Power-over-Ethernet: 48 VDC nominal
- Current Consumption: 300 mA (12 VDC); 75 mA (PoE 48 VDC)
- Power Consumption: 3.6 W
- PoE: IEEE 802.3af (802.3at Type 1); Power level: Class 1

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

Video performance
- Sensitivity – (3200K, reflectivity 89%, F1.4, 30IRE)
  - Color: 0.25 lx
  - Mono: 0.05 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)
- 1080p HD: 1920 x 1080
- 720p HD: 1280 x 720
- D1 4:3 (cropped): 704 x 480

Video functions
- Day/Night: Color, Monochrome, Auto
- Adjustable picture settings: Contrast, Saturation, Brightness
- White Balance: 3 automatic modes, manual mode and measure
- Shutter: Automatic Electronic Shutter (AES); Fixed shutter (1/25 [30] to 1/15000) selectable
- Default shutter: On/off
- Backlight compensation
- Noise reduction: Intelligent Dynamic Noise Reduction with separate temporal and spatial adjustments
- Contrast enhancement: On/off
- Sharpness: Sharpness enhancement level selectable
- Intelligent defog: Intelligent Defog automatically adjusts parameters for best picture in foggy or misty scenes (switchable)
- Privacy Masking: Four independent areas, fully programmable
- Video Analysis: MOTION+
- Other functions: Image mirror, Image flip, Pixel counter, Video watermarking, Display stamping, Scene modes

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

Optical
- Lens mount: CS mount (C-mount with adapter ring)
- Lens connector: Standard 4-pin DC-iris connector
### Optical

| Focus control | Manual adjustment |
| Iris control | Automatic iris control |
| Lens type (V3 version) | Vari-focal 3.3 to 12 mm, DC Iris F1.4 – 360, IR corrected |
| • FoV (wide 3.3 mm) | $110^\circ \times 58^\circ$ (H x V) |
| • FoV (tele 12 mm) | $34^\circ \times 18^\circ$ (H x V) |

### Input/output

| Analog Video out | CVBS, 1 Vpp, 2.5 mm jack, 75 Ohm Selectable standard |
| Audio | Built-in microphone, 1 x mono line in, 1 x mono line out |
| • connectors | 3.5 mm mono jack |
| • signal line in | 0.707 Vrms , 20 kOhm typical |
| • signal line out | 0.707 Vrms, 10 kOhm typical, |
| Alarm input | 1 input |
| • activation | Short to activate |
| Alarm output | 1 output |
| • voltage | 24 VAC or +30 VDC max. Load current 1 A max. |

### Local storage

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

### 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 | ONVIF Profile S, Auto-MDIX |

### Software

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

### Mechanical

| Dimensions (H x W x D) | 55 x 64 x 113 mm (2.17 x 2.52 x 4.45 in) without lens |
| Dimensions (H x W x D) | 55 x 64 x 149 mm (2.17 x 2.52 x 5.87 in) with lens |
| Weight | 550 g (1.21 lb) without lens |
| Weight | 590 g (1.30 lb) with lens |
| Color | RAL 9017 Traffic black |
| Tripod Mount | Bottom and top 1/4-inch 20 UNC |

### Environmental

| Operating Temperature | -30 °C to +50 °C (-22 °F to +122 °F) |
| Storage Temperature | -40 °C to +70 °C (-40 °F to +158 °F) |
| Humidity | 0% to 90% relative humidity (non condensing) |

### Ordering information

**DINION IP 5000 HD**
Indoor 1080p IP box design camera. IDNR; day/night; H.264 quad-streaming; cloud services; ROI; motion/tamper/audio detection; 1080p
Order number **NBN-50022-C**

**DINION IP 5000 HD**
Indoor 1080p IP box design camera; IDNR; day/night; H.264 quad-streaming; cloud services; ROI; motion/tamper/audio detection; 1080p; vari-focal 3.3 to 12 mm, DC Iris, F1.4 lens, IR corrected
Order number **NBN-50022-V3**

### Accessories

**Varifocal SR Megapixel Lens**
Varifocal SR megapixel IR corrected lens. 1/2.5” sensor; CS-mount; 4-pin SR-iris; 5 MP; 9 to 40 mm; F1.5 to F8
Order number **LVF-5005C-S0940**

**Varifocal SR Megapixel Lens**
Varifocal SR megapixel IR corrected lens. 1/2.5” sensor; CS-mount; 4-pin SR-iris; 5 MP; 1.8 to 3 mm; F1.8 to F8
Order number **LVF-5005C-S1803**

**Varifocal SR Megapixel Lens**
Varifocal SR megapixel lens. 1/2” sensor; C-mount; 4-pin SR-iris; 3 MP; 3.8 to 13 mm; F1.4 to F8
Order number **LVF-5003N-S3813**
Varifocal Megapixel Lens
Varifocal megapixel IR corrected lens. 1/1.8" sensor max; C-mount; 4-pin DC-iris; 5 MP; 12 to 50 mm; F1.6 to T360
Order number LVF-5005N-S1250

S1460 Service/Monitor Cable
2.5 mm jack to BNC video connector cable. 1 m
Order number S1460

EX12LED-3BD-8M Infrared Illuminator
Mini IR 850 nm illuminator. LED array; 3D Diffuser; black; 17 m HFOV; 30° beam pattern
Order number EX12LED-3BD-8M

EX12LED-3BD-8W Infrared Illuminator
Mini IR 850 nm illuminator. LED array; 3D Diffuser; black; 16 m HFOV; 60° beam pattern
Order number EX12LED-3BD-8W

EX12LED-3BD-9M Infrared Illuminator
Mini IR 940 nm illuminator. LED array; 3D Diffuser; black; 17 m HFOV; 30° beam pattern
Order number EX12LED-3BD-9M

EX12LED-3BD-9W Infrared Illuminator
Mini IR 940 nm illuminator. LED array; 3D Diffuser; black; 16 m HFOV; 60° beam pattern
Order number EX12LED-3BD-9W

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