BOSCH

DINION IP 5000 HD

▶ Stylish indoor network camera

▶ 1080p resolution for sharp images

▶ Intelligent Dynamic Noise Reduction reduces bandwidth and storage requirements by up to 50%

▶ SD card slot for local recording

▶ FTP, Dropbox and e-mail alarms

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:

IPS	1080p	720p	480p
30	1600	1200	600
15	1274	955	478
12	1169	877	438
5	757	568	284
2	326	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.
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 (Video Recording Manager) 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 cross-over 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 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.

Regulatory information

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

Standards	
	EN 60950-1
	UL 60950-1
	CAN/CSA-C22.2 NO. 60950-1-07
	EN 50130-4
	EN 50130-5 Class II
	FCC Part15 Subpart B, Class B
	EMC directive 2004/108/EC

	EN 55022 class B
	EN 55024
	C-tick AS/NZS CISPR 22 (equal to CISPR 22)
	ICES-003 Class B
	VCCI J55022 V2/V3
	EN 50121-4
ONVIF conformance	EN 50132-5-2; IEC 62676-2-3
Product certifications	CE, FCC, UL, cUL, C-tick, CB, VCCI

Region	Regulatory compliance/quality marks	
Europe	CE	DINION IP 4000/5000 HD
USA	UL	
	FCC	
Canada	CSA	

Installation/configuration notes

Dimensions

mm (in)
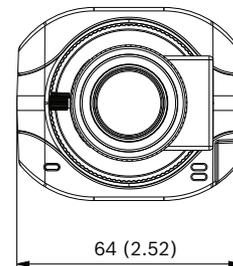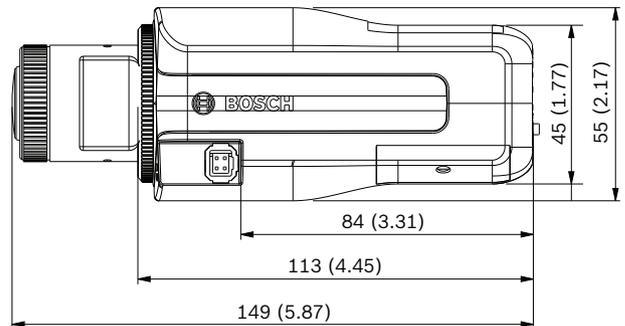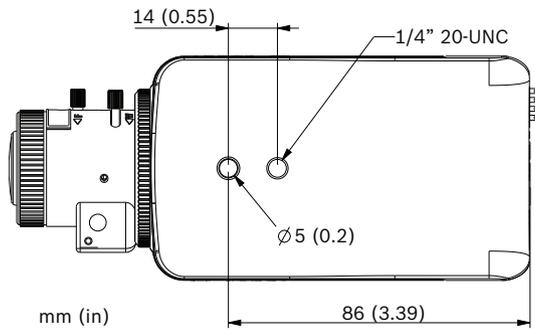
Technical specifications

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

Video streaming

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
• SD upright (cropped)	400 x 720
• 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
Shutter	Automatic Electronic Shutter (AES) Fixed shutter (1/25[30] to 1/15000) selectable Default shutter
Backlight compensation	On/off
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	
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
Focus control	Manual adjustment
Iris control	Automatic iris control
Lens type (V3 version)	Varifocal 3.3 to 12 mm, DC Iris F1.4 – 360, IR corrected
• FoV (wide 3.3 mm)	110º x 58º (H x V)
• FoV (tele 12 mm)	34º x 18º (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

Local storage	
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 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 ºC to +50 ºC (-22 ºF to +122 ºF)
Storage Temperature	-40 ºC to +70 ºC (-40 ºF to +158 ºF)

Environmental	
Humidity	0% to 90% relative humidity (non condensing)

Ordering information

NBN-50022-C Fixed camera 2MP
Indoor IP box design day/night camera with motion/tamper/audio detection.
1080p; surface mount box
NDAA compliant
Order number **NBN-50022-C | F.01U.283.895**

NBN-50022-V3 Fixed camera 2MP 3.3-12mm
Indoor IP box design day/night camera with motion/tamper/audio detection.
1080p
IR corrected
NDAA compliant
Order number **NBN-50022-V3 | F.01U.288.218**

Accessories

LVF-5005C-S0940 Varifocal lens, 9-40mm, 5MP, CS mount
Varifocal SR megapixel IR corrected lens with 1/2.5" sensor and CS-mount
Order number **LVF-5005C-S0940 | F.01U.274.352**

LVF-5005C-S1803 Varifocal lens, 1.8-3mm, 5MP, CS mount
Varifocal SR megapixel IR corrected lens with 1/2.5" sensor and CS-mount
Order number **LVF-5005C-S1803 | F.01U.274.354**

LVF-5003N-S3813 Varifocal lens, 3.8-13mm, 3MP, C mount
Varifocal SR megapixel lens with 1/2" sensor and C-mount
Order number **LVF-5003N-S3813 | F.01U.274.353**

LVF-5005N-S1250 Varifocal lens, 12-50mm, 5MP, C mount
Varifocal megapixel IR corrected lens with 1/1.8" sensor max and C-mount
Order number **LVF-5005N-S1250 | F.01U.305.567**

S1460 Service monitor cable, 2.5mm jack to BNC
2.5 mm jack to BNC video connector cable. 1 m
Order number **S1460 | F.01U.500.418**

EX12LED-3BD-8M EX12LED, 850 nm, Medium Beam 30deg
Mini IR 850 nm illuminator. LED array; 3D Diffuser; black; 17 m HFOV; 30º beam pattern
Order number **EX12LED-3BD-8M | F.01U.172.643**

EX12LED-3BD-8W EX12LED, 850 nm, Wide Beam 60deg
Mini IR 850 nm illuminator. LED array; 3D Diffuser; black; 16 m HFOV; 60º beam pattern
Order number **EX12LED-3BD-8W | F.01U.172.644**
F.01U.136.397

EX12LED-3BD-9M EX12LED, 940 nm, Medium Beam 30deg
Mini IR 940 nm illuminator. LED array; 3D Diffuser; black; 17 m HFOV; 30º beam pattern
Order number **EX12LED-3BD-9M | F.01U.172.645**

EX12LED-3BD-9W EX12LED, 940 nm, Wide Beam 60deg
Mini IR 940 nm illuminator. LED array; 3D Diffuser; black; 16 m HFOV; 60º beam pattern
Order number **EX12LED-3BD-9W | F.01U.172.646**

NPD-5001-POE Midspan, 15W, single port, AC in
Power-over-Ethernet midspan injector for use with PoE enabled cameras; 15.4 W, 1-port
Weight: 200 g (0.44 lb)
Order number **NPD-5001-POE | F.01U.305.288**

NPD-5004-POE Midspan, 4 port x 15W, AC in
Power-over-Ethernet midspan injector for use with PoE enabled cameras; 15.4 W, 4-ports
Weight: 620 g (1.4 lb)
Order number **NPD-5004-POE | F.01U.305.289**

Services

EWE-D5IPHD-IW 12 mths wrty ext DINION IP 5000 HD
12 months warranty extension
Order number **EWE-D5IPHD-IW | F.01U.346.307**