DINION IP 7000 HD cameras are 1080p30 progressive scan CMOS cameras that use the Bosch-designed digital imaging technology. The camera delivers the highest standards of performance and reliability in any security and surveillance scenario, day or night. Features such as multicasting, internet streaming and iSCSI recording are fully supported.

**System overview**

Compared to SD cameras, the DINION IP 7000 HD offers, at no higher cost, motorized autofocus, higher resolution, better sensitivity, higher frame rates, and improved picture quality, and is still more bandwidth-efficient. Video storage costs are significantly reduced.

**Functions**

**Outstanding image quality**

With a 1/2.7-inch CMOS HD sensor, the camera delivers outstanding image quality. Image performance and color reproduction are superb even under challenging lighting conditions. This true day/night can automatically switch from color to monochrome mode by sensing the illumination level or manually via the alarm input or a web browser.

**Content-Based Imaging Technology**

Content-Based Imaging Technology (C-BIT) 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 retune the image processing. This provides better detail in the areas that matter and better all-round performance.

**iDNR reduces bandwidth and storage requirements**

The camera uses intelligent Dynamic Noise Reduction (iDNR) 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 30% 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 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.
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>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>1600</td>
<td>1200</td>
<td>600</td>
</tr>
<tr>
<td>15</td>
<td>1274</td>
<td>955</td>
<td>478</td>
</tr>
<tr>
<td>12</td>
<td>1169</td>
<td>877</td>
<td>438</td>
</tr>
<tr>
<td>5</td>
<td>757</td>
<td>568</td>
<td>284</td>
</tr>
<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.

**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.

With IVA, the Intelligent tracker can follow objects within the defined regions of interest. The Intelligent tracker can autonomously detect and track moving objects or the user can click on an object which the Intelligent tracker will then follow.

**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

**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.

**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.

**Video analytics**
With built-in video content analysis, the camera reinforces the intelligence-at-the-Edge concept where edge devices become increasingly intelligent. The MOTION+ video motion analysis system that is built into all camera versions is the perfect solution for applications where standard video content analysis features are required.

The IVA version of the camera uses the latest generation of the Bosch Intelligent Video Analysis (IVA) software. This IVA system is the guard-assistant system of choice when reliable indoor or outdoor video analytics is needed. The state-of-the-art system reliably detects, tracks, and analyzes moving objects while suppressing unwanted alarms from spurious sources in the image.

The face detection feature detects faces in the scene and forwards a high quality JPEG image of the best shot of each face when the face disappears from the scene.

Retrospective forensic search capabilities are available remotely from the web browser or the Bosch Video Client.

**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. The video and audio communication channels can be independently AES encrypted with 128-bit keys by installing the optional encryption site license.

**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 Bosch Recording System, with the free-of-charge Bosch Video Client, or with the video security mobile App.
The Bosch Video Client PC surveillance software offers a user-friendly interface to support easy installation and configuration. It also provides easy live viewing of multiple cameras, playback, forensic search and export.

**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 (Open Network Video Interface Forum) Profile S specification. This guarantees interoperability between network video products regardless of manufacturer. For trouble-free network cabling, the camera supports Auto-MDIX which allows the use of straight or cross-over cables. 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.

**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.

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

The auto-focus lens wizard makes it easy for an installer to accurately focus the camera for both day and night operation. The wizard is activated from the web browser or from the on-board camera push button making it easy to choose the workflow that suits best. The automatic motorized back focus adjustment with 1:1 pixel mapping ensures the camera is always focused accurately.

**Typical applications**
- Retail, banks
- Stadiums
- Schools
- Care facilities
- Traffic monitoring (air, land and sea)
- Hotels, bars and nightclubs
- Commercial and government buildings
- City surveillance and safety
- Border control

**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 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**

<table>
<thead>
<tr>
<th>Emission</th>
<th>EN55022 Class B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FCC Part 15, class B</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Immunity</th>
<th>EN50130-4 (PoE, +12 VDC, 24 VAC)*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EN50121-4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Safety</th>
<th>EN60950-1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UL60950-1 (2nd edition)</td>
</tr>
<tr>
<td></td>
<td>CAN/CSA-C 22.2 No. 60950-1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vibration</th>
<th>Camera with lens as per IEC60068-2-6 (5 m/s², operational)</th>
</tr>
</thead>
</table>

ONVIF conformance

EN 50132-5; IEC 62676-2-3

* Chapters 7 and 8 (mains voltage supply requirement) are not applicable to the camera. However, if the system in which this camera is used needs to comply with this standard, then any power supplies used must comply with this standard.

**Region**

<table>
<thead>
<tr>
<th>Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
</tr>
<tr>
<td>USA</td>
</tr>
<tr>
<td>Canada</td>
</tr>
</tbody>
</table>

Certifications and approvals
### Installation/configuration notes

#### Controls

| 1 | Data (RS485/422/232) | 6 | Reset button |
| 2 | Alarm in, relay out | 7 | Video out |
| 3 | 10/100 Base-T Fast Ethernet | 8 | Power supply input |
| 4 | MicroSD card slot | 9 | Earth |
| 5 | Menu button | 10 | Audio in / Audio out |

#### Dimensions

![Dimensions Diagram](image)

**Technical specifications**

| Power | Power Supply | 24 VAC 50/60 Hz  
12 VDC  
Power-over-Ethernet 48 VDC nominal |
| --- | --- | --- |
| Current Consumption | 400 mA | 500 mA IVA (12 VDC)  
350 mA | 450 mA IVA (24 VAC)  
150 mA | 175 mA IVA (PoE 48 VDC) |

#### Power

- **Power Consumption**:  
- 4.8 W | 6 W IVA (12 VDC)  
- 8.4 W | 10.8 W IVA (24 VAC)  
- 7.2 W | 8.4 W IVA (PoE 48 VDC)  
- **PoE**: IEEE 802.3af (802.3at Type 1)  

#### Sensor

- **Type**: 1/2.7-inch CMOS  
- **Pixels**: 1952 x 1092 (2.03MP)  

#### Video performance

- **Sensitivity** – (3200K, reflectivity 89%, F1.2, 30IRE)
  - Color: 0.22 lx (0.022 fc)  
  - Mono: 0.05 lx (0.005 fc)  
- **Dynamic range**: 76 dB Wide Dynamic Range (92 dB with iAE)  

#### 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. 240 ms  
- **GOP structure**: IP, IBP, IBBP  
- **Encoding interval**: 1 to 30 (25) ips  
- **Resolutions (H x V)**
  - 1080p HD: 1920 x 1080  
  - 960p HD 4:3 (cropped): 1280 x 960  
  - 720p HD: 1280 x 720  
  - Upright 9:16 (cropped): 400 x 720  
  - D1 4:3 (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

- **Day/Night**: Color, Mono, Auto  
- **White Balance**: ATW (2500 to 10000K), ATWhold and manual
### Video functions

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shutter</strong></td>
<td>Automatic Electronic Shutter (AES) Fixed (1/30 to 1/15000) selectable Default shutter</td>
</tr>
<tr>
<td><strong>Backlight compensation</strong></td>
<td>Off, Auto</td>
</tr>
<tr>
<td><strong>Contrast enhancement</strong></td>
<td>On/off</td>
</tr>
<tr>
<td><strong>Sharpness</strong></td>
<td>Sharpness enhancement level selectable</td>
</tr>
<tr>
<td><strong>Privacy Masking</strong></td>
<td>Four independent areas, fully programmable</td>
</tr>
<tr>
<td><strong>Video Motion Analysis</strong></td>
<td>Motion+ or IVA option</td>
</tr>
</tbody>
</table>

### 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

- **Analog Video out (service only)**: CVBS (PAL/NTSC), 1 Vpp, 2.5 mm jack, 75 Ohm
- **Audio**: 1 x mono line in, 1 x mono line out
  - **connector**: 3.5 mm stereo jack
  - **signal line in**: 12 kOhm typical, 1 Vrms max
  - **signal line out**: 1 Vrms at 1.5 kOhm typical,
- **Alarm**: 2 inputs
  - **connector**: Clamp (non-isolated closing contact)
  - **activation voltage**: +5 VDC to +40 VDC (+3.3 VDC with DC-coupled 22 kOhm pull-up resistor)
- **Relay**: 1 output
  - **connector**: Clamp
  - **voltage**: 30 VAC or +40 VDC Maximum 0.5 A continuous, 10VA
- **Data port**: RS-232/422/485

### 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, IGMPV2/V3, ICMP, ICMPv6, RTSP, FTP, Telnet, ARP, DHCP, SNMP, SNMPv1, MIB-II, 802.1x, DNS, DNSv6, DDNS, SMTP, iSCSI, UDHPP (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
- **Ethernet connector**: RJ45
- **Connectivity**: ONVIF Profile S, Auto-MDIX

### Software

- **Unit Configuration**: Via web browser or Configuration Manager
- **Firmware update**: Remotely programmable
- **Software viewer**: Bosch Video Client

### Optical

- **Lens mount**: CS mount (C-mount with adapter ring)
- **Lens connector**: Standard 4-pin DC-iris connector
- **Lens Types**: Manual and DC-Iris auto-detect with override DC-iris drive: max. 50 mA continuous
- **Lens Controls**: Wizard from web page or camera button

### Mechanical

- **Dimensions (W x H x L)**: 78 x 66 x 140 mm (3.07 x 2.6 x 5.52 inch) without lens
- **Weight**: 690 g (1.52 lb) without lens
- **Color**: RAL 9007 Metallic Titanium
- **Tripod Mount**: Bottom (isolated) and top 1/4-inch 20 UNC

### Environmental

- **Operating Temperature**: -20°C to +55°C (-4°F to 131°F)
- **Operating Temperature (IVA)**: -20°C to +50°C (-4°F to 122°F)
- **Storage Temperature**: -30°C to +70°C (-22°F to +158°F)
- **Operating Humidity**: 20% to 93% RH
- **Storage Humidity**: up to 98% RH

### Ordering information

**DINION IP 7000 HD**

High-performance IP box camera for intelligent HD surveillance. 1080p30; PoE; iDNR; ROI; day/night; H.264 quad-streaming; free viewing Apps; cloud services; audio/motion detection; MOTION+

Order number **NBN-832V-P**
DINION IP 7000 HD
High-performance IP box camera for intelligent HD surveillance. 1080p30; PoE; iDNR; iAE; ROI; day/night; H.264 quad-streaming; free viewing Apps; cloud services; audio/motion detection; IVA
Order number NBN-832V-IP

Accessories

Varifocal SR Megapixel Lens
Rugged 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
Rugged 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 SR Megapixel Lens
Rugged 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

UPA-2410-60 Power Supply
Power supply. 120 VAC, 60 Hz; 24 VAC, 10 VA Out
Order number UPA-2410-60

UPA-2430-60 Power Supply
Power supply for camera. 120 VAC, 60 Hz; 24 VAC, 30 VA Out
Order number UPA-2430-60

S1374 Adapter
Adapter to convert C mount lens to CS mount camera
Order number S1374

VJT-XTCF
High-performance video transcoder. H.264; CF card slot; ROI; 2 channels
Order number VJT-XTCF

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

Software Options

BVIP AES 128 Bit Encryption
Site licence for BVIP AES 128-bit encryption. Enables encrypted communication between BVIP devices and management stations
Order number MVS-FENC-AES 

Represented by:

Americas:
Bosch Security Systems, Inc.
150 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 384
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 2899
apr.securitysystems@bosch.com
www.boschsecurity.asia

China:
Bosch (Shanghai) Security Systems Ltd.
201 Building, No. 333 Fuquan Road
North IBD
Changning District, Shanghai
200335 China
Phone: +86 21 22181111
Fax: +86 21 22182388
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

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