

DINION IP starlight 7000 HD

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HD ONVIF



- ▶ Excellent low-light performance (0.017 lx in color)
- ▶ Intelligent noise reduction reduces bandwidth and storage requirements by up to 30%
- ▶ Outstanding wide dynamic range (100 dB with iAE)
- ▶ Auto back focus for fast installation

The DINION IP starlight 7000 HD camera provides clear images 24/7 – even at night or under low-light conditions.

High sensitivity in color (0.017 lx) and monochrome mode (0.0057 lx) enables this camera to work with a minimum of ambient light. This exceptional light sensitivity combined with Content-Based Imaging Technology (C-BIT) ensures crisp, clear, detailed images in all lighting conditions. The camera can also provide up to 60 images per second.

System overview

Compared to SD cameras, the DINION IP starlight 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

Exceptional low-light performance

The latest sensor technology combined with the sophisticated noise suppression results in a sensitivity of 0.017 lx in color. The low-light performance is so good that the camera continues to provide excellent color performance even with a minimum of ambient light.

The camera is a true day/night camera with a mechanical filter for truly outstanding nighttime performance (0.0057 lx in monochrome). The filter can be switched remotely, or automatically via a light level sensor or contact input.

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 re-tune the image processing. This provides better detail in the areas that matter and better all-round performance. In IVA versions, the intelligent Automatic Exposure (iAE) technology, for example, allows you to view moving objects in bright and dark areas of a scene.

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:

| IPS | 720p | 480p |
|-----|------|------|
| 60 | 1400 | |
| 30 | 1163 | 600 |
| 15 | 926 | 478 |
| 12 | 850 | 438 |
| 5 | 550 | 284 |
| 2 | 237 | 122 |

Fast performance

The 60 images-per-second mode provides for optimum performance in fast action scenes and is particularly suitable for casino and banking applications.

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.

For IVA cameras, the Intelligent tracker can also 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.
- **Intelligent AE** – 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.

Certifications and approvals**HD standards**

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: 50 and 60 frames/s

Standards

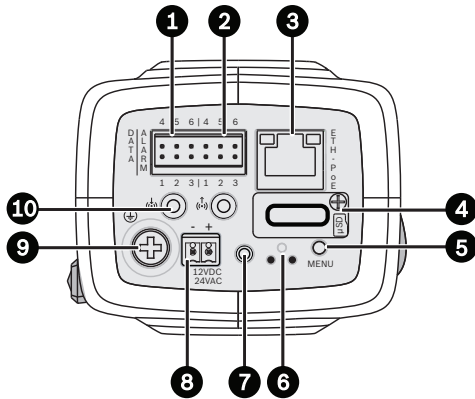
| | |
|-------------------|---|
| Emission | EN55022 Class B FCC Part 15, class B |
| Immunity | EN50130-4 (PoE, +12 VDC, 24 VAC)* EN50121-4 |
| Safety | EN60950-1 UL60950-1 (2nd edition) CAN/CSA-C 22.2 No. 60950-1 |
| Vibration | Camera with lens as per IEC60068-2-6 (5 m/s ² , operational) |
| ONVIF conformance | EN 50132-5-2; 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 | Certification |
|--------|---------------|
| Europe | CE |
| USA | UL |
| | FCC |
| Canada | CSA |

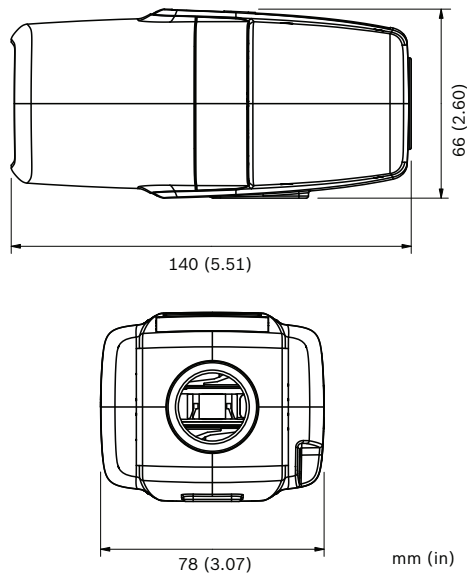
Installation/configuration notes

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



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 | 1/3-inch CMOS |
| Pixels | 1312 x 1069 (1.4MP) |

| | |
|--|------------------------------------|
| Video performance | |
| Sensitivity – (3200K, reflectivity 89%, F1.2, 30IRE) | |
| • Color | 0.017 lx (0.0017 fc) |
| • Mono | 0.0057 lx (0.00057 fc) |
| Dynamic range | 84 dB WDR 100 dB WDR (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 60 (50) ips |

| | |
|----------------------------|--|
| Resolutions (H x V) | |
| • 720p HD | 1280 x 720 |
| • 1024p 5:4 (cropped) | 1280 x 1024 (30p max., no IVA) |
| • 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 | |
|---------------------------------|---|
| Shutter | Automatic Electronic Shutter (AES) Fixed (1/30 [1/25] to 1/15000) selectable Default shutter |
| Backlight compensation | Off / On / iAE (BLC) |
| Contrast enhancement | On/off |
| Noise reduction | Intelligent Dynamic Noise Reduction (iDNR) with separate temporal and spatial adjustments |
| Sharpness | Sharpness enhancement level selectable |
| Privacy Masking | Four independent areas, fully programmable |
| Video Motion Analysis | Intelligent Video Analysis (IVA) |
| 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, IGMP V2/V3, ICMP, ICMPv6, RTSP, FTP, Telnet, ARP, DHCP, SNMP (V1, MIB-II), 802.1x, DNS, DNSv6, DDNS, 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 |
| 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 starlight 7000 HD | |
| High-performance IP box camera for intelligent HD surveillance in low light. 720p60; PoE; iDNR; ROI; day/night; H.264 quad-streaming; free viewing Apps; cloud services; audio/motion detection; MOTION+ Order number NBN-733V-P | |

DINION IP starlight 7000 HD

High-performance IP box camera for intelligent HD surveillance in low light. 720p60; PoE; iDNR; iAE; ROI; day/night; H.264 quad-streaming; free viewing Apps; cloud services; audio/motion detection; IVA
Order number **NBN-733V-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**

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**

UPA-2430-60 Power Supply

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

UPA-2450-60 Power Supply, 120 V, 60 Hz

Indoor power supply for camera. 120 VAC, 60 Hz In; 24 VAC, 50 VA Out
Order number **UPA-2450-60**

UPA-2450-50 Power Supply, 220 V, 50 Hz

Indoor power supply for camera. 220 VAC, 50 Hz In; 24 VAC, 50 VA Out
Order number **UPA-2450-50**

S1374 Adapter

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

S1460 Service/Monitor Cable

2.5 mm jack to BNC video connector cable. 1 m
Order number **S1460**

VJT-XTCXF

Dynamic transcoder to enable HD video viewing. HD1080; IVA; H.264 streaming; web interface
Order number **VJT-XTCXF**

Software Options**BVIP AES 128 Bit Encryption**

Single installation licence for BVIP AES 128-bit encryption site. Enables encrypted communication between BVIP devices and management stations.
Order number **MVS-FENC-AES**

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