DINION HD 1080p HDR

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Invented for life

▶ High Dynamic Range to see bright and dark details simultaneously

▶ Intelligent scene content analysis optimizes image processing

▶ Intelligent noise reduction reduces bandwidth and storage requirements

The high dynamic range DINION HD 1080p camera combines intelligence with adaptive video processing to bring you high performance content-based imaging in any security or surveillance scenario, day or night.

The camera uses an internal feedback system based on the intelligent analysis of the scene, to re-tune the video processing. This provides better detail in the areas that matter and better all-round performance.

Functions

High Dynamic Range
The High Dynamic Range (HDR) of the camera means that you can view details in the bright and the dark areas of a scene at the same time. HDR is based on a dual exposure process that captures more details in highlights and shadows even under challenging lighting conditions. The result is that you can distinguish objects and features easily.

Intelligent content analysis
The advanced Intelligent Video Analysis (IVA) in the camera examines the scene and provides feedback to re-tune the image processing. The content-based image analysis is used to radically improve image quality and to identify areas for enhanced processing.

For example, the intelligent Automatic Exposure (iAE) allows you to view moving objects in bright or dark backlight.
IVA also provides motion detection features that include flow and crowd detection, and the ability to detect placed and removed objects.

Efficient bandwidth
The analytic intelligence of the camera is used to reduce bandwidth and storage requirements. The intelligent Dynamic Noise Reduction (iDNR) is driven by the content of the scene. This removes noise artifacts so effectively that compression efficiency is very high. This results in reduced-bandwidth streams that still retain a high image quality. The camera provides the most usable image possible by cleverly optimizing the detail-to-bandwidth ratio.

Regions of interest
Regions of interest can be defined so that you can zoom in on specific areas of the full image. Because the resolution of the camera is so high, specific details can still be distinguished even after zooming in. Regions of interest can be sent in separate streams so it is possible to view both an overview and a detail at the same time.

Simple installation

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:

- Outdoor
- Motion
- Lowlight
- Intelligent AE
- Indoor
- Vibrant

An 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 PC or from the camera 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.

Connections

The camera conforms to the ONVIF (Open Network Video Interface Forum) Profile S specification which 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. Camera power is supplied via PoE (Power-over-Ethernet) or via the 24 VAC/12 VDC connector.

Streams

The innovative Quad-streaming feature delivers three H.264 streams (a 1080p30 HD stream, a downscaled resolution stream, and a HD I-frame only stream) together with an M-JPEG stream. These four streams facilitate bandwidth-efficient viewing and recording as well as integration with third-party video management systems. The following combinations are possible:

	Stream 1 H.264	Stream 2 H.264	Stream 3 H.264	Stream 4 M-JPEG
1	MP 1080p25/30	1080p5	i-frame only stream 1	1080p
2	MP 1080p25/30	720p10	i-frame only stream 1	1080p
3	MP 1080p25/30	Downscaled	i-frame only stream 1	1080p
4	MP 1080p25/30	Copy of stream 1	i-frame only stream 1	1080p
5	MP 720p25/30	720p25/30	i-frame only stream 1	720p
6	MP 720p25/30	Downscaled	i-frame only stream 1	720p
7	Downscaled	Downscaled	i-frame only stream 1	1080p

Downscaled: 480p30, 432p30, 288p30, 240p30 or 144p30

Storage management

Recording management can be controlled by the Bosch Video Recording Manager (VRM) or the camera can use iSCSI targets directly without recording software. A microSD card can be used for local alarm recording or for Automatic Network Replenishment (ANR) to improve the overall recording reliability.

Day/Night switching

In night mode, the camera enhances low light viewing by switching the IR (infrared) filter out of the optical path and providing a monochrome image. The camera can switch from color to monochrome mode automatically by sensing the illumination level or manually via the alarm input or a web browser.

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.

Surveillance software

There are many ways to access the camera's video: on a PC using a web browser, with the Bosch Video Management System, or with the bundled Bosch Video Client. 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.

Some typical applications

- Tunnels – viewing details in bright and dark areas
- Entrances and exits – identification with strong backlight
- Traffic – capturing moving vehicles at night

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
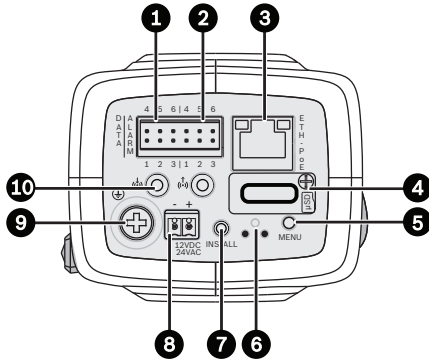
Electro Magnetic Compatibility

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 500 g (1.1 lb) lens as per IEC60068-2-6 (5 m/s², operational)

* 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,

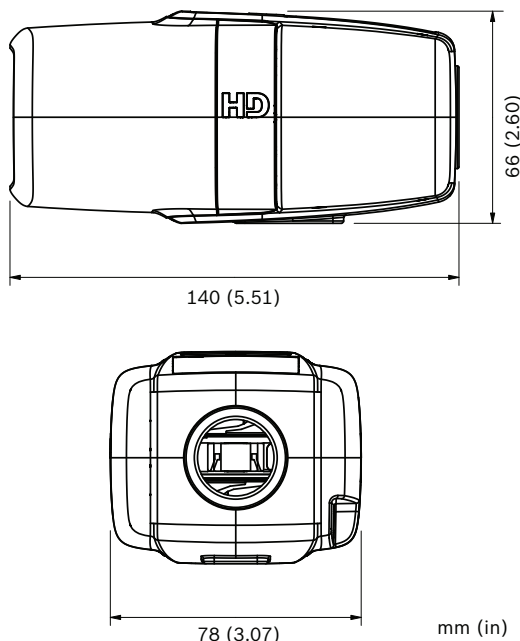then any power supplies used must comply with this standard.

Installation/Configuration Notes

Controls

1	Data (RS485/422/232)	6	Reset button
2	Alarm in, relay out	7	Service 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

66 (2.60)

140 (5.51)

78 (3.07)

mm (in)

Technical Specifications

Electrical

Power Supply	24 VAC ±10% 50/60 Hz 12 VDC ±10% Power-over-Ethernet 48 VDC nominal
Current Consumption	500 mA (12 VDC) 450 mA (24 VAC) 175 mA (PoE 48 VDC)

Sensor

Type	1/3-inch CMOS HD
Active Pixels	1920 x 1080

Video

Video compression	H.264 (ISO/IEC 14496-10); M- JPEG, JPEG
Streaming	Four configurable streams in H.264 and M-JPEG, configurable frame rate and bandwidth.
Resolutions (H x V)	
- 1080p HD	1920 x 1080
- 720p HD	1280 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

Overall IP Delay	Min. 120 ms, Max. 240 ms
GOP structure	IP, IBP, IBBP

Sensitivity (3200 K, scene reflectivity 89%, F1.2)

	Minimum illumination (30 IRE)
Color	0.25 lx (0.025 fc)
Monochrome	0.08 lx (0.008 fc)

Day/Night	Color, Mono, Auto
White Balance	ATW (2500 to 10000K), ATWhold and manual Indoor and Outdoor ATW
Shutter	Automatic Electronic Shutter (AES) Fixed (1/30 [1/25] to 1/150000) selectable Default shutter

Backlight compensation	Off/Auto/Intelligent
Wide dynamic range	On/off
Noise reduction	Intelligent Dynamic Noise Reduction (iDNR) with separate temporal and spatial adjustments
Contrast enhancement	On/off
Sharpness	Sharpness enhancement level selectable
Dynamic Range	90 dB
Privacy Masking	Four independent areas, fully programmable
Video Motion Analysis	Intelligent Video Analysis

Audio

Standard	AAC G.711, 8kHz sampling rate L16, 16kHz sampling rate
Signal-to-noise ratio	> 50 dB
Audio Streaming	Full duplex / half duplex

Input/output

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
• activation voltage	+5 VDC to +40 VDC (+3.3 VDC with DC-coupled 22 kOhm pull-up resistor)
Relay	1 output
• voltage	30 VAC or +40 VDC Maximum 0.5 A continuous, 10VA

Local Storage

Memory card slot	Supports SDHC and SDXC microSD cards
Recording	Continuous recording, ring recording. alarm/events/schedule recording

Software Control

Unit Configuration	Via web browser or Configuration Manager
Software update	Flash ROM, remote programmable

Network

Protocols	IPv4, IPv6, UDP, TCP, HTTP, HTTPS, RTP, IGMP V2/V3, ICMP, RTSP, FTP, Telnet, ARP, DHCP, SNTP, SNMP (V1, MIB-II), 802.1x, SMTP, iSCSI, UPnP (SSDP)
Encryption	TLS 1.0, SSL, AES (optional)

Ethernet	STP, 10/100 Base-T, auto-sensing, half/full duplex, RJ45
PoE supply	IEEE 802.3at compliant
Connectivity	ONVIF Profile S Auto-MDIX

Mechanical

Dimensions (H x W x L)	78 x 66 x140 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 and top 1/4-inch 20 UNC

Environmental

Operating Temperature	-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

NBN-932V-IP DinionHD 1080p HDR
1/3-inch CMOS, 1080p, HDR, H.264 dual stream, IVA, PoE
Order number **NBN-932V-IP**

VLG-3V3813-MP3 Varifocal Megapixel Lens
3 Megapixel, 3.8-13 mm varifocal, f1.4, 1/2-inch lens, DC iris
Order number **VLG-3V3813-MP3**

VLG-4V0940-MP5 Varifocal Megapixel Lens
5 Megapixel, 9-40 mm varifocal, f1.5, 1/2.5-inch lens, DC iris, IR corrected
Order number **VLG-4V0940-MP5**

VLG-2V1803-MP5 Varifocal Megapixel Lens
5 Megapixel, 1.8-3 mm varifocal, f1.8, 1/2.5-inch lens, DC iris, IR corrected
Order number **VLG-2V1803-MP5**

EX12LED-3BD-8M Infrared Illuminator
EX12LED IR Illuminator, 850 nm, 30 deg beam
Order number **EX12LED-3BD-8M**

EX12LED-3BD-8W Infrared Illuminator
EX12LED, IR Illuminator, 850 nm, 60 deg beam
Order number **EX12LED-3BD-8W**

EX12LED-3BD-9M Infrared Illuminator
EX12LED IR Illuminator, 940 nm, 30 deg beam
Order number **EX12LED-3BD-9M**

EX12LED-3BD-9W Infrared Illuminator
EX12LED, IR Illuminator, 940 nm, 60 deg beam
Order number **EX12LED-3BD-9W**

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

UPA-2430-60 Power Supply
120 VAC, 60 Hz, 24 VAC, 30 VA Out
Order number **UPA-2430-60**

UPA-2450-60 Power Supply, 120 V, 60 Hz
Indoor, 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, 220 VAC, 50 Hz In; 24 VAC, 50 VA Out
Order number **UPA-2450-50**

MVS-FENC-AES BVIP AES 128 Bit Encryption
BVIP AES 128-bit encryption site license. This license
is required only once per installation. It enables
encrypted communication between BVIP devices and
management stations.
Order number **MVS-FENC-AES**

Accessories

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

S1460 Service/Monitor Cable
2.5 mm connector to BNC for analog and IP cameras,
1 m
Order number **S1460**