


BOSCH

Invented for life

NBN-498 Dinion2X Day/Night IP Cameras



- ▶ **1/3-inch Day/Night CCD with progressive scan**
- ▶ **20-bit image processing technology**
- ▶ **Wide Dynamic Range, 2X-dynamic engine and SmartBLC**
- ▶ **Tri-streaming: Dual H.264 and M-JPEG simultaneously**
- ▶ **Intelligence at the edge**
- ▶ **ONVIF conformant**

Dinion2X Day/Night IP cameras are progressive scan CCD cameras. They can tri-stream video simultaneously – on two H.264 streams and one M-JPEG stream. Equipped with 20-bit DSP with 2X-dynamic, they have a wide dynamic range for a sharper, more detailed image with outstanding color reproduction.

Features such as multicasting, internet streaming and iSCSI recording are fully supported. Dinion2X Day/Night IP cameras have built-in video motion detection and additional processing power for video content analysis systems.

Supporting the award-winning Dinion2X digital imaging technology, they provide proven, dependable service for the most demanding security and surveillance requirements, day or night.

Functions

Progressive scan

To capture sharp images, even in busy scenes with high motion content, the Dinion camera uses progressive scan technology.

Superior image quality

With a 1/3-inch CCD and Bosch's advanced digital signal processing, the Dinion2X Day/Night IP camera provides outstanding image quality in virtually all situations. The highly accurate 20-bit digital signal is automatically processed to reveal every detail of the image in both the high and low-light areas of the scene simultaneously.

20-bit Image Processing

The highly accurate digital signal processing optimally captures the detail in both bright highlights and deep shadows simultaneously. By combining 20-bit image processing and wide dynamic range, the Dinion2X maximizes the information visible in the picture even with strong backlight.

Wide Dynamic Range

The superior wide dynamic range performance for all lighting conditions reveals details previously unseen.

2X-Dynamic and SmartBLC

Using 2X-Dynamic technology, pixel-by-pixel analysis provides the user with the most detailed information. Turn on SmartBLC to automatically compensate the image without the need for complicated set-up or without compromising dynamic range. Features such as Autoblack and Sharpness further improve the details in a scene, pixel by pixel.

Efficient bandwidth and storage management

The cameras use H.264 compression, bandwidth throttling, and multicasting capabilities to manage bandwidth and storage requirements efficiently, while delivering high image quality and resolution. The bandwidth of an H.264 stream using Main profile at 4CIF resolution is about the same as one MPEG-4 stream at 2CIF resolution. Bosch's innovative tri-streaming feature enables Dinion IP cameras to generate two independent H.264 streams and one M-JPEG stream simultaneously. This allows streaming of high-quality H.264 images for live viewing and recording while streaming M-JPEG images to another device at the same time. The M-JPEG video stream also provides easy integration with third-party JPEG or M-JPEG-compatible video management systems.

Dinion IP cameras offer unparalleled recording options. Attached to the network, they can use iSCSI targets directly, as well as Network Video Recorders (NVRs). The iSCSI storage target support enables the cameras to function as a conventional DVR, while streaming high-performance live video across the network.

Standard intelligence

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 basic video content analysis features are required. This motion analysis algorithm is based on pixel change and includes object size filtering capabilities and sophisticated tamper-detection capabilities.

Hardware enhanced

The hardware-enhanced version of the camera gives you the opportunity to upgrade the video content analysis features of the camera with the more advanced Intelligent Video Analysis (IVA) option. This option bases the IVA algorithm on digital imaging technology that uses multi-level image analysis of pixels, texture, and object direction, and is activated by installing a license.

ONVIF conformance

The camera conforms to the ONVIF (Open Network Video Interface Forum) specification which guarantees interoperability between network video products regardless of manufacturer. ONVIF conformant devices are able to exchange live video, audio, metadata and control information. They are automatically discovered and connected to network applications such as video management systems.

Unsurpassed flexibility

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 VIDOS. The camera is also ideal for use with a Divar 700 Series digital video recorder. By routing a video stream to a Bosch video decoder, you can also present the video with ultimate clarity on an analog monitor.

Cost effective, simple installation

Three power options, PoE (Power-over-Ethernet), 24 VAC and 12 VDC are available. Using PoE makes installation easier and more cost-effective, as cameras do not require a local power source. 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.

For trouble free network cabling, the cameras support Auto-MDIX.

Dinion IP cameras can be configured using the control buttons on the camera as an alternative to configuration over IP. The On-Screen Display (OSD) simplifies back focus adjustment and network configuration, minimizing installation and support costs. The Lens Wizard automatically detects the lens type and helps focus the lens at the maximum opening to maintain proper focus.

Easy Upgrade

Remotely upgrade the camera whenever new firmware becomes available. This ensures up-to-date products, thus protecting investment with little effort.

Access Security

Various security levels are available for accessing the network, the camera, and the data channels. As well as password protection with three levels, 802.1x authentication using a RADIUS is supported. To secure Web browser access use HTTPS with a SSL certificate stored in the camera. For total data protection, the video and audio communication channels can be independently AES encrypted with 128-bit keys by installing the optional Encryption Site License.

Programmable Modes

Six independent, pre-programmed operating modes support typical applications, but are fully programmable for individual situations.

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, manually via the alarm input, or remotely via a web browser. An internal, through-

the-lens IR detector enhances monochrome mode stability by preventing the camera from returning to color mode when IR-illumination is dominant.

Privacy masking

Four different privacy zones allow specific parts of a scene to be blocked. A mask for any part of the scene can be pre-programmed.

Default Shutter

The default shutter speed captures fast moving objects when sufficient light is available. When light levels fall and other adjustments have been exhausted, the shutter speed reverts to a standard setting to maintain sensitivity.

SensUp Dynamic

By increasing the integration time up to 10 times on the CCD, the effective sensitivity is dramatically enhanced. This is especially useful when relying only on moonlight for illumination.

Typical applications

- Prisons and correctional facilities
- Traffic monitoring (air, land and sea)
- Hotels, bars and nightclubs
- Commercial and government buildings
- City surveillance and safety
- Border control

Certifications and Approvals

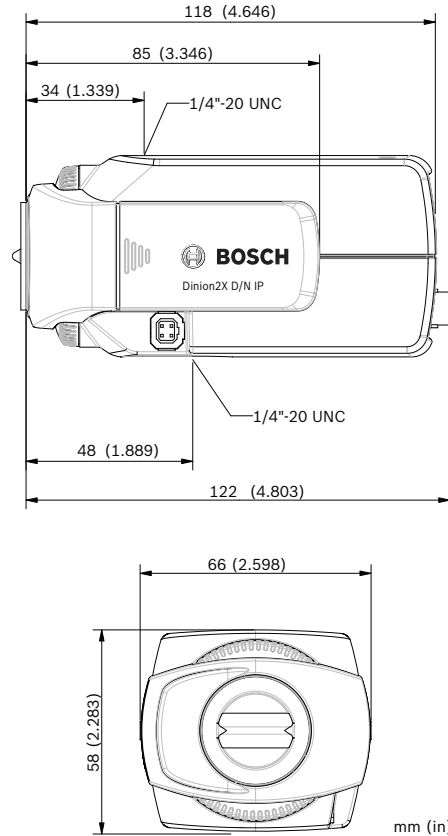
Region	Certification
Europe	CE
USA	FCC + UL

Electro Magnetic Compatibility

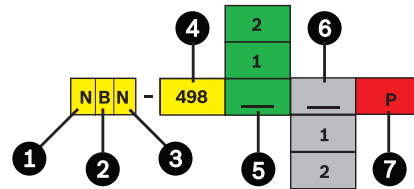
Emission	EN55022 Class B EN61000-3-2 EN61000-3-3 FCC Part 15
Immunity	EN50130-4 (PoE, +12 VDC) EN55024 (24 VAC) EN50121-4
Safety	EN60950-1 UL60950-1 (2nd edition) CAN/CSA-C 22.2 No. 60950-1
Vibration	Camera with 500 g (1.1 lb) lens as per IEC60068-2-6 (5 m/s ² , operational)

Installation/Configuration Notes

Dimensions



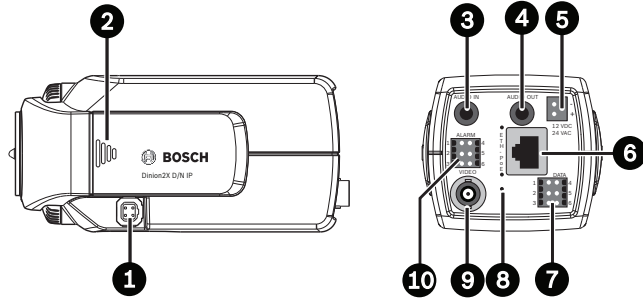
Ordering chart



- | | |
|-----------------------------|---------------------------------------|
| 1 N: Network camera | 5 1: PAL, 50 Hz
2: NTSC, 60Hz |
| 2 B: Fixed body | 6 1: Motion+
2: Designed for IVA * |
| 3 N: Day/Night | 7 P: PoE |
| 4 498: Dinion2X performance | |

* No license included

Controls



1	Lens connector	6	10/100 Base-T Fast Ethernet
2	Control buttons	7	Data (RS485/422/232)
3	Audio in	8	Reset button
4	Audio out	9	BNC video output (service mode)
5	Power supply input	10	Alarm in, relay out

Parts Included

Quantity	Components
1	NBN-498 Series Dinion2x Day/Night IP Camera
1	Spare lens connector
1	Safety Instructions
1	Quick Install Guide
1	Mini DVD-ROM with manuals, software and tools
1	Power connector
1	Alarm I/O connector
1	Data connector
1	C/CS mount adapter

Technical Specifications

Electrical

Model No.	Rated Voltage	Rated Frequency
NBN-498-1xP	24 VAC ±10%	50 Hz
	12 VDC ±10%	
NBN-498-2xP	24 VAC ±10%	60 Hz
	12 VDC ±10%	
Current Consumption	550 mA 650 mA IVA (12 VDC)	200 mA 250 mA IVA (PoE 48 VDC)
	550 mA 650 mA IVA (24 VAC)	

Sensor

Type	1/3-inch CCD, WDR, dual shutter
Active Pixels (PAL)	752 x 582
Active Pixels (NTSC)	768 x 494

Video

Video compression	H.264 (ISO/IEC 14496-10); M-JPEG, JPEG
Data rate	9.6 Kbps to 6 Mbps
Resolution	Horizontal x vertical (PAL/NTSC ips)
4CIF	704 x 576/480 (25/30 ips)
CIF	352 x 288/240 (25/30 ips)
Overall IP Delay	Min. 120 ms, Max. 240 ms
GOP structure	I, IP
Frame rate	1 to 50/60 (PAL/NTSC) H.264 1 to 25/30 (PAL/NTSC) M-JPEG

Video Out

Signal	Analog composite (NTSC or PAL), service
Connector	BNC, 75 Ohm
Horizontal resolution	540 TVL
Video S/N	50 dB

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

	Full video (100 IRE)	Usable picture (50 IRE)	Minimum Illumination (30 IRE)
Color	2.4 lx (0.223 fc)	0.47 lx (0.044 fc)	0.15 lx (0.0139 fc)
Color + SensUp 10x	0.24 lx (0.0223 fc)	0.047 lx (0.00437 fc)	0.015 lx (0.00139 fc)
Monochrome	0.98 lx (0.091 fc)	0.188 lx (0.0174 fc)	0.060 lx (0.0056 fc)
Monochrome + SensUp 10x	0.098 lx (0.0091 fc)	0.019 lx (0.00176 fc)	0.0060 lx (0.000557 fc)

Day/Night	Color, Mono, Auto
Modes	6 preset programmable modes
Dynamic range	120 dB (20-bit image processing)
Signal-to-Noise Ratio	> 50 dB
Dynamic engine	2X-Dynamic, XF-Dynamic, SmartBLC+2X-Dynamic
SmartBLC	On (includes 2X-Dynamic) / Off
AGC	AGC On or Off (0 - 30 dB) selectable
White Balance	ATW (2500 to 10000K), ATWhold and manual
Shutter	Auto (1/50 [1/60] to 1/10000) selectable Auto (1/50 [1/60] to 1/50000) automatic flickerless, fixed selectable
Sensitivity up	Adjustable from Off up to 10x
Auto Black	Automatic continuous, Off
Dynamic Noise Reduction	Auto, On/off selectable
Sharpness	Sharpness enhancement level selectable
Peak White Invert	On/Off

Privacy Masking	Four independent areas, fully programmable
Video Motion Analysis	Motion+ or IVA
Test Pattern Generator	Color bars 100%, Grayscale 11-step, Sawtooth 2H, Checker board, Cross hatch, UV plane
Synchronization	Internal, Line Lock selectable
Lens Mount	CS (max lens protrusion 5 mm, 0.2 inch), C-mount compatible with supplied adapter ring
Lens Types	Manual, DC- and Video-Iris auto-detect with override DC-iris drive: max. 50 mA continuous Video-iris: 11.5 VDC \pm 0.5, max. 50 mA continuous
Controls	OSD with soft-key operation (multi-lingual)

Audio

Standard G.711	300 Hz to 3.4 kHz at 8 kHz sampling rate
Signal-to-noise ratio	> 50 dB

Input/output

Audio	1 x mono line in, 1 x mono line out
• connector	3.5 mm stereo jack
• signal line in	9 kohm typical, 5.5 Vpp max
• signal line out	3.0 Vpp at 10 kOhm typical, 2.3 Vpp at 32 Ohm typical, 1.7 Vpp at 16 Ohm 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

Software Control

Unit Configuration	Via web browser or Configuration Manager
Flicker Control	50/60 Hz, selectable
Software update	Flash ROM, remote programmable

Network

Protocols	RTP, Telnet, UDP, TCP, IP, HTTP, HTTPS, FTP, DHCP, IGMP V2/V3, ICMP, ARP, SMTP, SNMP, 802.1x, UPnP
Encryption	TLS 1.0, SSL, AES (optional)
Ethernet	STP, 10/100 Base-T, auto-sensing, half/full duplex, RJ45
PoE supply	IEEE 802.3af compliant

Mechanical

Dimensions (H x W x L)	58 x 66 x 122 mm (2.28 x 2.6 x 4.8 inch) without lens
Weight	542 g (1.195 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 +50°C (-4°F to 122°F)
Operating Temperature (IVA)*	-20°C to +45°C (-4°F to 113°F)
Storage Temperature	-40°C to +70°C (-40°F to +158°F)
Operating Humidity	20% to 93% RH
Storage Humidity	up to 98% RH

* for extended temperature range use HAC-IPCCC

Ordering Information

NBN-498-11P Dinion2X D/N IP Camera 1/3-inch Progressive scan, H.264 dual stream, 2X DSP, WDR, PAL, 50 Hz, Motion+, PoE	NBN-498-11P
NBN-498-21P Dinion2X D/N IP Camera 1/3-inch Progressive scan, H.264 dual stream, 2X DSP, WDR, NTSC, 60 Hz, Motion+, PoE	NBN-498-21P
NBN-498-12P Dinion2X D/N IP Camera 1/3-inch Progressive scan, H.264 dual stream, 2X DSP, WDR, PAL, 50 Hz, IVA prepared, PoE	NBN-498-12P
NBN-498-22P Dinion2X D/N IP Camera 1/3-inch Progressive scan, H.264 dual stream, 2X DSP, WDR, NTSC, 60 Hz, IVA prepared, PoE	NBN-498-22P
EX12LED-3BD-8M Infrared Illuminator EX12LED IR Illuminator, 850 nm, 30 deg beam	EX12LED-3BD-8M
EX12LED-3BD-8W Infrared Illuminator EX12LED, IR Illuminator, 850 nm, 60 deg beam	EX12LED-3BD-8W
EX12LED-3BD-9M Infrared Illuminator EX12LED IR Illuminator, 940 nm, 30 deg beam	EX12LED-3BD-9M
EX12LED-3BD-9W Infrared Illuminator EX12LED, IR Illuminator, 940 nm, 60 deg beam	EX12LED-3BD-9W
LTC 3364/21 Varifocal Lens IR corrected 1/3-inch, 2.8 – 6 mm, DC-iris, CS-mount F1.4-200, 4-pin	LTC3364/21
LTC 3664/30 Varifocal Lens IR corrected 1/3-inch, 3.0 – 8 mm, DC-iris, CS-mount F1.0-360, 4-pin	LTC3664/30

Ordering Information

LTC 3664/40 Varifocal Lens IR corrected 1/3-inch, 2.8 – 11 mm, DC-iris, CS-mount F1.4-360, 4-pin	LTC3664/40
LTC 3674/20 Varifocal Lens IR corrected 1/3-inch, 7.5 – 50 mm, DC-iris, CS-mount F1.3-360, 4-pin	LTC 3674/20
LTC 3764/20 Varifocal Lens IR corrected 1/2-inch, 4 – 12 mm, DC-iris, C-mount F1.2-360, 4-pin	LTC 3764/20
LTC 3774/30 Varifocal Lens IR corrected 1/2-inch, 10 – 40 mm, DC-iris, C-mount F1.4-360, 4-pin	LTC 3774/30
UPA-2410-60 Power Supply 120 VAC, 60 Hz, 24 VAC, 10 VA Out	UPA-2410-60
UPA-2430-60 Power Supply 120 VAC, 60 Hz, 24 VAC, 30 VA Out	UPA-2430-60
UPA-2450-60 Power Supply 120 VAC, 60 Hz, 24 VAC, 50 VA Out	UPA-2450-60
UPA-2420-50 Power Supply 220 VAC, 50 Hz, 24 VAC, 20 VA Out	UPA-2420-50
UPA-2450-50 Power Supply 220 VAC, 50 Hz, 24 VAC, 50 VA Out	UPA-2450-50
S1374 Adapter converts C mount lens to CS mount camera	S1374
HAC-IPCCC Camera Cooling Case For use with Dinion IP cameras in combination with HSG and UHO Series housings equipped with an optional blower	HAC-IPCCC
Software Options	
MVC-FIVA4-CAM IVA 4.0 VCA software license for IP camera/dome (e-license)	MVC-FIVA4-CAM
MVC-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 encoders, decoders and management stations.	MVC-FENC-AES

Americas:
Bosch Security Systems, Inc.
130 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
5600 JB Eindhoven, The Netherlands
Phone: +31 40 2577 284
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 6258 5511
Fax: +65 6571 2698
apr.securitysystems@bosch.com
www.boschsecurity.com