

**BOSCH**  
Invented for life

## NBC-455 Dinion IP Cameras



- ▶ 1/3-inch color CCD with progressive scan
- ▶ Quad streaming
- ▶ Flexible recording options
- ▶ Intelligence at the edge
- ▶ ONVIF conformant
- ▶ Auto lens detection including Lens Wizard

Dinion IP cameras are progressive scan CCD color cameras. They can quad-stream video simultaneously – on two H.264 streams, an I-frame recording stream, and an M-JPEG stream. Features such as multicasting, internet streaming and iSCSI recording are fully supported. Dinion IP cameras have built-in video motion detection and additional processing power for video content analysis systems.

To simplify installation, automatic lens detection and easy OSD installation procedures are provided.

Dinion IP cameras include picture enhancement features such as NightSense for low light scenes and Autoblack for low contrast scenes.

Supported by the award-winning Dinion digital imaging technology, they provide a proven, dependable solution for many security and surveillance requirements.

### Functions

#### Progressive scan

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

#### A quality image

With a 1/3-inch color CCD and Bosch's advanced digital signal processing, the Dinion IP provides professional image quality. Automatically activate the NightSense feature to extend sensitivity under low-light conditions by a factor of three in monochrome operation. Autoblack improves the overall contrast of an image in low contrast scenes, such as foggy weather conditions.

#### Efficient bandwidth and storage management

The cameras use H.264 (Main Profile) compression, bandwidth throttling, and multicasting capabilities to manage bandwidth and storage requirements efficiently, while delivering high image quality and resolution.

Bosch's innovative Quad-streaming feature enables the Dinion IP to deliver three H.264 streams (two 4CIF streams and an I-frame only stream) together with an M-JPEG stream. These four streams facilitate bandwidth-efficient viewing and recording options as well as integration with third-party video management systems.

Dinion IP cameras offer unparalleled recording options. Attached to the network, they can use iSCSI targets directly without any additional recording software. The recording capabilities of the system can be further enhanced by using the Bosch Video Recording Manager.

The camera also supports local recording on a microSD card. This can be used for local alarm recording or for Automatic Network Replenishment (ANR) to improve the overall reliability of video recording.

### 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, which 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 the Bosch Video Client. 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.

### Typical applications

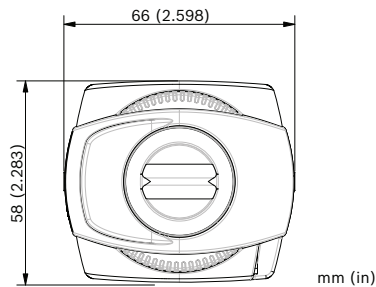
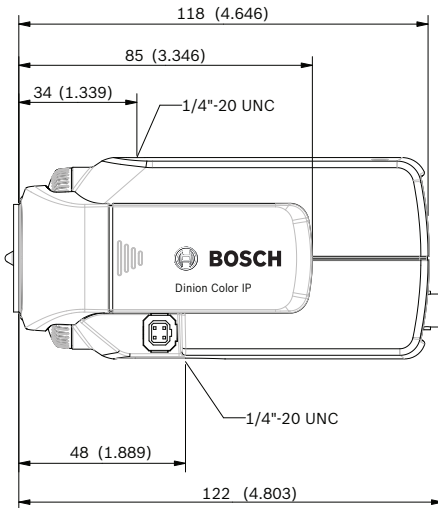
- Museums and art galleries
- Shopping centers
- Offices
- Schools, colleges and universities
- Petrol / gas station

## Certifications and Approvals

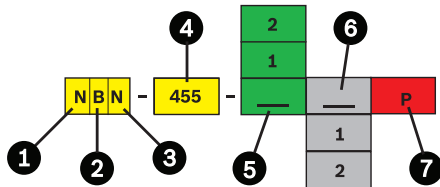
Region	Certification	
Europe	CE	
USA	FCC	+ UL
Electro Magnetic Compatibility		
Emission	EN55022 Class B EN61000-3-2 EN61000-3-3 FCC Part 15	
Immunity	EN50130-4 (PoE, +12 VDC) EN55024 (24 VAC) EN50121-4	
Safety	EN60950-1 UL60950-1 (2nd edition) CAN/CSA-C 22.2 No. 60950-1	
Vibration	Camera with 500 g (1.1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

## Installation/Configuration Notes

### Dimensions



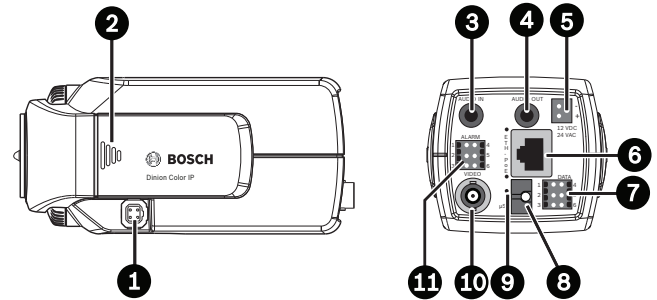
### Ordering chart



1 N: Network camera	5 1: PAL, 50 Hz; 2: NTSC, 60Hz
2 B: Dinion fixed body	6 1: Motion+ 2: IVA ready *
3 C: Color	7 P: PoE
4 455 Dinion performance	

\* No license included

### Controls



1 Lens connector	7 Data (RS485/422/232)
2 Control buttons	8 MicroSD card slot
3 Audio in	9 Reset button
4 Audio out	10 BNC video output (service mode)
5 Power supply input	11 Alarm in, relay out
6 10/100 Base-T Fast Ethernet	

### Parts Included

Quantity	Components
1	NBC-455 Series Dinion 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

**Note** Lens and microSD card are not included in a standard delivery.

### Technical Specifications

#### Electrical

Model No.	Rated Voltage	Rated Frequency
NBC-455-1xP	24 VAC $\pm 10\%$ 12 VDC $\pm 10\%$ Power-over-Ethernet	50 Hz
NBC-455-2xP	24 VAC $\pm 10\%$ 12 VDC $\pm 10\%$ Power-over-Ethernet	60 Hz
Current Consumption	450 mA   550 mA IVA (12 VDC) 450 mA   550 mA IVA (24 VAC) 200 mA   250 mA IVA (PoE 48 VDC)	
Power Consumption	5.4 W   6.6 W IVA (12 VDC) 6.7 W   8.2 W IVA (24 VAC) 9.6 W (PoE 48 VDC)	

**Sensor**

Type	1/3-inch, CCD
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, IBBP
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)**

	<b>Full video (100 IRE)</b>	<b>Usable picture (50 IRE)</b>	<b>Minimum illumi- nation (30 IRE)</b>
Color	2.6 lx (0.26 fc)	0.65 lx (0.065 fc)	0.30 lx (0.03 fc)
NightSense	1.04 lx (0.104 fc)	0.26 lx (0.026 fc)	0.12 lx (0.012 fc)
Color/NightSense	Auto, Forced		
Dynamic Range	60 dB (10-bit image processing)		
Signal-to-noise Ratio	> 50 dB		
BLC	Center window weighting		
Gain	20 dB (max)		
White Balance	ATW (2500 to 10000 K), ATWHold		
Shutter	Auto (1/50 [1/60] to 1/50000) automatic flickerless, fixed selectable		
Auto Black	Automatic continuous, Off		
Privacy Masking	Four independent areas, fully programmable		
Video Motion Analysis	Motion+ or IVA		
Test Pattern Generator	Color bars 100%, Grayscale 11-step, Saw-tooth 2H, Checker board, Cross hatch, UV plane		
Synchronization	Internal, Line Lock, selectable		
Lens Mount	CS (max lens protrusion 5 mm, 0.2 inch) and C-mount compatible		

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
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Controls	OSD with soft-key operation (multi-lingual)
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**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
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**Software Control**

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

**Network and Storage**

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
Local Storage	Supports microSD cards (SDHC)

**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	524 g (1.155 lb) without lens
Color	RAL 7035 Light Gray
Tripod Mount	Bottom 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**

<b>NBC-455-11P Dinion IP Camera</b> Dinion Color IP Camera, 1/3-inch Progressive Scan, H.264, PAL, 50Hz, PoE, microSD slot	<b>NBC-455-11P</b>
<b>NBC-455-21P Dinion IP Camera</b> Dinion Color IP Camera, 1/3-inch Progressive Scan, H.264, NTSC, 60Hz, PoE, microSD slot	<b>NBC-455-21P</b>
<b>NBC-455-12P Dinion IP Camera</b> Dinion Color IP Camera, 1/3-inch Progressive Scan, H.264, PAL, 50Hz, PoE, microSD slot, IVA ready	<b>NBC-455-12P</b>
<b>NBC-455-22P Dinion IP Camera</b> Dinion Color IP Camera, 1/3-inch Progressive Scan, H.264, NTSC, 60Hz, PoE, microSD slot, IVA ready	<b>NBC-455-22P</b>

**Accessories**

<b>LTC 3361/50 Varifocal Lens</b> 1/3-inch, 2.8 – 10 mm, manual-iris, CS-mount F1.4-close	<b>LTC3361/50</b>
<b>LTC 3371/21 Varifocal Lens</b> 1/3-inch, 5 to 50 mm, manual iris, CS-mount F1.4-close	<b>LTC 3371/21</b>
<b>LTC 3361/32 Varifocal Lens</b> 1/3-inch, 3.0 – 8 mm, manual-iris, CS-mount F1.0-close	<b>LTC3361/32</b>
<b>LTC 3361/41 Varifocal Lens</b> 1/3-inch, 2.8 to 12 mm, manual-iris, CS-mount F1.4-close	<b>LTC 3361/41</b>
<b>LTC 3364/50 Varifocal Lens</b> 1/3-inch, 2.8 – 10 mm, DC-iris, CS-mount, F1.4-360, 4 pin	<b>LTC3364/50</b>
<b>LTC 3374/21 Varifocal Lens</b> 1/3-inch, 5 to 50 mm, DC-iris, CS-mount F1.4-360, 4-pin	<b>LTC 3374/21</b>
<b>LTC 3364/60 Varifocal Lens</b> 1/3-inch, 3.5 – 8 mm, DC-iris, CS-mount F1.4-360, 4-pin	<b>LTC3364/60</b>
<b>LTC 3364/41 Varifocal Lens</b> 1/3-inch, 2.8 to 12 mm, DC-iris, CS-mount F1.4-360, 4-pin	<b>LTC 3364/41</b>
<b>LTC 3374/50 Varifocal Lens</b> 1/3-inch, 5 – 50 mm, DC-iris, CS-mount F1.7-360, 4-pin	<b>LTC3374/50</b>

**Ordering Information**

<b>UPA-2410-60 Power Supply</b> 120 VAC, 60 Hz, 24 VAC, 10 VA Out	<b>UPA-2410-60</b>
<b>UPA-2430-60 Power Supply</b> 120 VAC, 60 Hz, 24 VAC, 30 VA Out	<b>UPA-2430-60</b>
<b>UPA-2450-60 Power Supply</b> 120 VAC, 60 Hz, 24 VAC, 50 VA Out	<b>UPA-2450-60</b>
<b>UPA-2420-50 Power Supply</b> 220 VAC, 50 Hz, 24 VAC, 20 VA Out	<b>UPA-2420-50</b>
<b>UPA-2450-50 Power Supply</b> 220 VAC, 50 Hz, 24 VAC, 50 VA Out For use with certain 24 VAC camera models.	<b>UPA-2450-50</b>
<b>HAC-IPCCC Camera Cooling Case</b> For use with Dinion IP cameras in combination with HSG and UHO Series housings equipped with an optional blower	<b>HAC-IPCCC</b>
<b>Software Options</b>	
<b>MVC-FIVA4-CAM</b> IVA 4.x VCA software license for IP camera/dome (e-license)	<b>MVC-FIVA4-CAM</b>
<b>MVC-FENC-AES BVIP AES 128 Bit Encryption</b> 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.	<b>MVC-FENC-AES</b>

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