

# NBE-3702-AL Bullet 2MP 3.3-10.2mm IP66 IK10 IR DINION 3100i IR



The NBE-3702-AL is a versatile device for general outdoor surveillance monitoring. The compact design for discreet use with quick set-up offers high installation flexibility.

The camera offers a 1/2.8" sensor and HDR technology at HD 1080p. Combined with an integrated varifocal lens, the camera provides a sharp and detailed image with flexible field of view. With added IR functionality, the camera is able to function even in scenes where ambient lighting is not always available.

The device features built-in IVA Pro Buildings, bringing highly reliable deep learning-based detection which only triggers relevant alarms. The device is also secured with TPM (Trusted Platform Module) functionality, ensuring safe storage of all certificates and keys needed for authentication and encryption.

The camera features an IK10 and IP66 impact and ingress protection rating, ensuring protection against vandalism and weather conditions.

#### **Functions**

#### **High Dynamic Range**

The camera has High Dynamic Range. This is based on a multiple-exposure process that captures more details in the highlights and in the shadows even in the same scene. The result is that you can easily distinguish objects and features, for example, faces with bright backlight.













- ▶ 1080p resolution
- ► IVA Pro Buildings brings reliable deep-learning based detection of persons and vehicles
- ► High Dynamic Range (HDR) to see every detail in both bright and dark areas of the scene
- ➤ Built-in Secure Element with Trusted Platform Module (TPM) to ensure the highest level of security for device access and data transport
- ► Built-in intelligent IR illuminator with up to 30 m (98 ft) viewing distance

#### Intelligent Video Analytics Pro (IVA Pro Buildings)

The camera comes with the IVA Pro Buildings preinstalled and brings reliable deep-learning based detection and tracking of persons and vehicles. Being resistant to false triggers caused by challenging environments with rain, wind (moving trees), snow, hail, and water reflections as well as shadows and bugs, it detects, tracks, and classifies objects.

A smart set of alarm and counter rules alerts you when predefined alarms are triggered, and enables forensic search with high efficiency though recordings. Configuration effort is minimized and made easy by removing the need for calibration.

## Intelligent streaming

Smart encoding capabilities, utilizing video analytics, reduce bandwidth consumption to extremely low levels. Only relevant information in the scene, such as motion or objects found through analytics, needs to be encoded. The camera is capable of triple streaming, allowing it to deliver independent and configurable streams for live viewing, recording, or remote monitoring via constrained bandwidths. Each of these streams can be adapted independently to deliver high-quality video, perfectly tailored to purpose, while reducing bit rate by up to 90% compared to a standard camera.

#### Edge recording

Insert a memory card into the card slot to store up to 2 TB of local alarm recording. Pre-alarm recording in RAM reduces recording bandwidth on the network, and extends the effective life of the memory card. It has advanced edge recording providing a reliable storage solution possible due to the combination of these functions:

- Industrial SD card support allows for extreme lifetime
- Health monitoring of industrial SD cards provide early service indications.

#### **DORI** coverage

DORI (Detect, Observe, Recognize, Identify) is a standard system (EN-62676-4) for defining the ability of a person viewing the video to distinguish persons or objects within a covered area. The maximum distance at which a camera/lens combination can meet these criteria is shown below:

1080p HD camera with 3.3 - 10.2 mm lens\*

DORI	DORI definition	Distance 3.3 mm/10.2 m m	Horizontal width
Detect	25 px/m	29 m/138 m	77 m
	(8 px/ft)	(95 ft/453 ft)	(252 ft)
Observe	63 px/m	12 m/55 m	31 m
	(19 px/ft)	(38 ft/179 ft)	(100 ft)
Recognize	125 px/m	6 m/28 m	15 m
	(38 px/ft)	(20 ft/92 ft)	(50ft)
Identify	250 px/m	3 m/14 m	8 m
	(76 px/ft)	(10 ft/46 ft)	(25 ft)

<sup>\*</sup>The numbers in this table do not reflect IVA distances. For IVA distances, refer to the lens calculator / Bosch IP video design tool.

#### 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.

#### **Data security**

Special measures have been put in place to ensure the highest level of security for device access and data transport. The three-level password protection with security recommendations allows users to customize device access. Web browser access can be protected using HTTPS and firmware updates can also be protected with authenticated secure uploads. The cameras have built-in Secure Element (SE) hardware providing main Trusted Platform Module (TPM) functionality to ensure the highest levels of

data security and privacy protection. Together with Public Key Infrastructure (PKI) support, superior protection from malicious attacks is guaranteed. The cameras also support RSA encryption key lengths of up to 4096 bits, ensuring data safety beyond 2030, as well as 802.1x network authentication with EAP/TLS. The advanced certificate handling offers:

- Bosch origin device certificate pre-installed
- Self-signed unique certificates automatically created when required
- Client and server certificates for authentication
- · Client certificates for proof of authenticity
- · Certificates with encrypted private keys

#### **Bosch Remote Portal**

With the secure cloud infrastructure, Bosch Remote Portal, you can manage your connected Bosch devices. From the Bosch Remote Portal you can:

- Complete initial configuration of your connected Bosch devices (online or offline).
- Update firmware for single or multiple devices.
- · Manage certificates.
- Monitor the health of your connected Bosch devices.

#### System integration and ONVIF conformance

The camera conforms to the ONVIF Profile S, ONVIF Profile G, ONVIF Profile M, and ONVIF Profile T specifications. For H.265 configuration, the camera supports Media Service 2, which is part of ONVIF Profile T. Compliance with these standards guarantees interoperability between network video products regardless of manufacturer.

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.

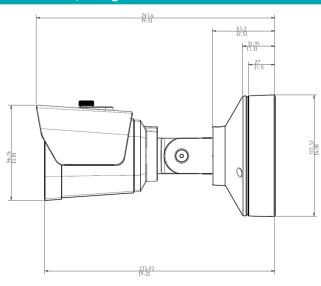
#### **Regulatory information**

Standard	Туре
Emission	EN 55032 (Class A)
	CFR 47 FCC part 15 (Class A)
	VCCI (Class A)
	AS/NZS CISPR32 (Class A)
Immunity	EN 55035
	EN IEC 61000-6-4: 2019
	EN IEC 61000-6-2: 2019
Environmental	IEC 60068-2-1
	IEC 60068-2-2
	IEC 60068-2-6
	IEC 60068-2-27
	IEC 60068-2-30

Standard	Туре
	EN IEC 63000: 2018
	RoHS EU, 2011/65/EU and 2015/863/EU
	WEEE EU, 2012/19/EU Packaging EU, 94/62/EU
	N2580-1 (Bosch standard)
	N33.6 (Bosch standard)
Safety	EN IEC 62368-1
	IEC 62368-1
	UL 62368-1
Ingress protection	EN 60529 (IP66)
Image performance	IEC 62676-5
Color representation	ITU-R BT.709-6
ONVIF conformance	EN 50132-5-2, EN 62676-2
IR lighting	IEC 62471
Impact protection	EN 62262 (IK10)
Marks	CE, FCC, UL, WEEE, RCM, VCCI, UKCA, BSMI, KCC, CMIM
Compliance	NDAA compliant

Region	Regulatory compliance/quality marks	
Europe	CE	
USA	UL CAP	Cybersecurity Assurance Program
Great Britain	UKCA	

# Installation/configuration notes



## Dimensions in mm (inch)

Parts included	
Quant- ity	Component
1	DINION 3100i IR device
1	TR20 key
1	Mounting template
3	Screws
3	Anchors
1	Quick installation guide
1	Safety and security information
3	Installer UX label
1	RJ45 guider

# Technical specifications

## **Electrical**

PoE input	PoE IEEE 802.3af / 802.3at Type 1, Class 3
Power consumption PoE (W) (typical – maximum)	2.6 W - 6.74 W

## Sensor

Sensor type	1/2.8 inch CMOS
Effective pixels (H x V)	1,920 x 1,080
Total sensor pixels	2 MP approx.

## Sensitivity

Color (lx) (sensitivity measured according to IEC 62676 Part 5)	0.06 lx
Monochrome (lx) (sensitivity measured according to IEC 62676 Part 5)	0.0160 lx
Minimum illumination with IR (lx) (sensitivity measured according to IEC 62676 Part 5)	0 lx

## Dynamic range

High Dynamic Range (HDR) (dB)	120 dB
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Lens focal length (mm)	3.3 mm – 10.2 mm
Lens aperture (/F)	1.6 /F
Iris control	DC-iris
IR corrected	Yes
Day / Night	Switchable IR cut-filter
Zoom/focus control	Motorized
Horizontal field of view (°)	106° - 31°
Vertical field of view (°)	55° – 18°

#### **Video functions**

Auto (adjustable switch points); Color; Monochrome
Mirror image; Rotation 90°; Rotation 180°; Backlight compensation (BLC); Sharpness enhancement; Intelligent defog; Pixel counter; Saturation; Brightness; Video watermarking; Display stamping; Location
2,000 K - 10,000 K
Basic; Standard; Manual mode; Hold mode; Sodium lamp auto
Automatic Electronic Shutter (AES); 1/15,000 max; 1/25 [30] min
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## Video streaming

Video compression	H.264 (ISO/IEC 14496-10); M- JPEG; H.265/HEVC
Streaming	Multiple configurable streams in H.265; H.264 and M-JPEG; Config- urable framerate and bandwidth; Bosch Intelligent Streaming
Camera processing latency	<120ms
GOP structure	IP
Frame rate (fps)	1 fps – 30 fps
Video signal-to-noise ratio (dB)	>55 dB

Video resolution (H x V)	HD 1080p (16:9), 1920 x 1080 to
	0.1MP (16:9), 512 x 288

## Video content analysis

Analysis type	Intelligent Video Analytics Pro: IVA Pro Buildings
Alarm triggers	Any object; Object in field; Line crossing; Enter / leave field; Loitering; Follow route; Counting; Occupancy; Condition change; Similarity search; Objects stopping or starting to move
Object classes	Person; Vehicle
Object filters	Duration; Size; Aspect ratio; Direction; Color
Tracking modes	Base tracking (2D)
Number of possible alarm rules (simultaneously)	16
Additional functionalities	Tamper detection

## **Night vision**

IR function	On; Off; Auto
Built-in IR (m)	30 m
Built-in IR (ft)	98 ft
IR intensity	Manually adjustable
Wavelength (nm)	850 nm

## Inputs and outputs

Ethernet	Shielded RJ45
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## Storage

Internal storage	5-s-pre-alarm-recording
Memory card slot	Micro SDHC; Micro SDXC
Industrial SD cards	Extreme lifetime and health monitor- ing support that provides early ser- vice indication
Recording mode	Continuous (ring); Scheduled; Alarm; Event

# **Data security**

Secure element	RSA 4096 bit; AES/CBC 256 bit

PKI	X.509 certificates
End-to-end encryption	Full end-to-end with supported VMS
Encryption	TLS 1.2; AES 256; AES 128; TLS 1.3
Local storage encryption	XTS-AES
Video authentication	MD5; SHA-1; SHA-256; Checksum
Firmware protection	Signed firmware; Secure boot
Platform	
Common Product Platform	CPP14.3
Network	
Ethernet type	10/100BASE-T
System integration	
Protocols / standards	IPv4; IPv6; UDP; TCP; HTTP; HTTPS RTP/RTCP; IGMP V2/V3; ICMP; ICMPv6; RTSP; FTP; ARP; DHCP; APIPA (Auto-IP, link local address); NTP (SNTP); SNMP (V1, MIBII); SNMP (V3, MIBII); DNS; DNSv6; DDNS (DynDNS.org, selfHOST.de, no-ip.com); SMTP; iSCSI; UPnP (SSDP); DiffServ (QoS); LLDP; SOAP; CHAP; Digest authentication
Conformity	ONVIF Profile S; ONVIF Profile G; ONVIF Profile T; ONVIF Profile M
Mechanical	
Dimensions (Ø x H) (mm)	123 mm x 97 mm
Dimensions (Ø x H) (in)	4.8 in x 9.5 in
Weight (g)	1.3850 g
Weight (lb)	3.08 lb

Hinge material	Metal
Environmental	
Operating temperature (°C)	-30 °C – 50 °C
Operating temperature (°F)	-22 °F – 122 °F
Cold start temperature (°C)	-20°C
Cold start temperature (°F)	-4 °F
Storage temperature (°C)	-50 °C - 70 °C
Storage temperature (°F)	-58 °F – 158 °F
Operating relative humidity, non- condensing (%)	5% - 93%
Operating relative humidity, condensing (%)	5% - 100%
Storage relative humidity (%)	5% - 95%
Impact protection	IK10
IP rating	IP66
Sustainability	PVC free
Country of origin	Thailand

#### **Ordering information**

NBE-3702-AL Bullet 2MP 3.3-10.2mm IP66 IK10 IR Fixed bullet camera for outdoor 30 fps surveillance with H.264/H.265 and IVA Pro Buildings, 2 MP, 3.3-10.2 mm lens, IP66, IK10

NDAA compliant Order number NBE-3702-AL

#### **Accessories**

#### NDA-U-CBBS SMB, Dinion 3100i IR

Conduit back box for DINION 3100i IR and FLEXIDOME micro 3100i outdoor

Order number NDA-U-CBBS

#### Represented by:

Housing material

Color (RAL)

Color

Europe, Middle East, Africa: Bosch Security Systems B.V. P.O. Box 80002 5600 JB Eindhoven, The Netherlands www.boschsecurity.com/xc/en/contact/ www.boschsecurity.com

Bosch Sicherheitssysteme GmbH

RAL 9003 Signal white

Plastic / Metal

White

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