

NBE-3703-AL Bullet 5MP 3.3-10.2mm IP66 IK10 IR DINION 3100i IR



- ▶ Up to 5MP 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

The NBE-3703-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 1/2.7" sensor and HDR technology at HD 5 MP. 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.

Intelligent Video Analytics Pro (IVA Pro Buildings)

The camera comes with the IVA Pro Buildings pre-installed 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 through 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:

5MP 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 (8 px/ft) | 42 m/193 m (139 ft/633 ft) | 104 m (354 ft) |
| Observe | 63 px/m (19 px/ft) | 17 m/77 m (55 ft/251 ft) | 41 m (135 ft) |
| Recognize | 125 px/m (38 px/ft) | 9 m/39 m (28 ft/127 ft) | 21 m (68 ft) |
| Identify | 250 px/m (76 px/ft) | 4 m/19 m (14 ft/63 ft) | 10 m (34 ft) |

*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, Remote Portal, you can manage your connected Bosch devices. From the 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.

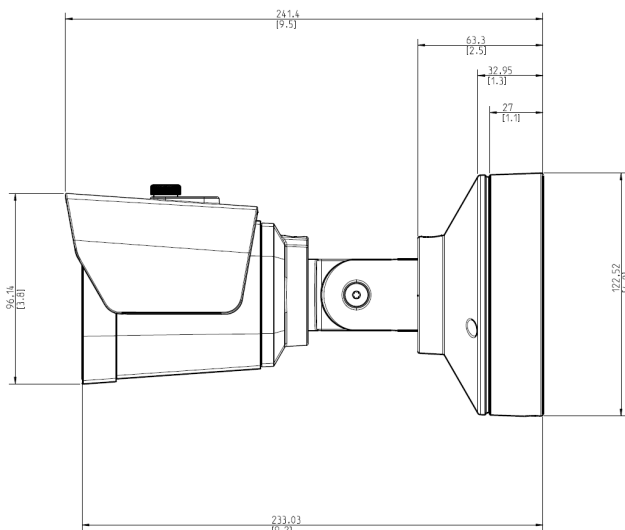
Regulatory information

| Standard | Type |
|---------------|--|
| 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 | Type |
|----------------------|--|
| | 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, BIS, KCC, CMIM |
| Compliance | NDA 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

| Quantity | 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

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|---|--|
| PoE input | PoE IEEE 802.3af / 802.3at Type 1, Class 3 |
| Power consumption PoE (W) (typical – maximum) | 3.24 W – 7.72 W |

Sensor

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|--------------------------|-----------------|
| Total sensor pixels | 5 MP approx. |
| Sensor type | 1/2.7 inch CMOS |
| Effective pixels (H x V) | 2,592 x 1,944 |

Sensitivity

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|--|---------|
| Color (lx) (sensitivity measured according to IEC 62676 Part 5) | 0.14 lx |
| Monochrome (lx) (sensitivity measured according to IEC 62676 Part 5) | 0.03 lx |
| Minimum illumination with IR (lx) (sensitivity measured according to IEC 62676 Part 5) | 0 lx |

Dynamic range

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|-------------------------------|--------|
| High Dynamic Range (HDR) (dB) | 120 dB |
|-------------------------------|--------|

Optical

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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 (°) | 101° – 30° |
| Vertical field of view (°) | 70° – 22° |

Video functions

| | |
|-------------------------|--|
| Day/night modes | Auto (adjustable switch points); Color; Monochrome |
| Camera functionality | Mirror image; Rotation 90°; Rotation 180°; Backlight compensation (BLC); Sharpness enhancement; Intelligent defog; Pixel counter; Saturation; Brightness; Video watermarking; Display stamping; Location |
| White balance (K) | 2,000 K – 10,000 K |
| White balance modes | Basic; Standard; Manual mode; Hold mode; Sodium lamp auto |
| Shutter modes | Automatic Electronic Shutter (AES); 1/15,000 max; 1/25 [30] min |
| Number of privacy masks | 8 |

Video streaming

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|----------------------------------|---|
| 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; Configurable 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) | 5MP (4:3), 2592 x 1944, to 0.1MP (4:3), 320x240 3.8MP (16:9), 2592 x 1456 to 0.1MP (16:9), 512 x 288 |
|--------------------------|---|

Video content analysis

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|---|--|
| 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 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

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|----------|---------------|
| Ethernet | Shielded RJ45 |
|----------|---------------|

Storage

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|---------------------|---|
| Internal storage | 5-s-pre-alarm-recording |
| Memory card slot | Micro SDHC; Micro SDXC |
| Industrial SD cards | Extreme lifetime and health monitoring support that provides early service 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

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|-------------------------|----------------------------|
| Common Product Platform | CPP14.3 |
| Memory (MB) | 2048 MB RAM, 8192 MB Flash |

Network

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|---------------|--------------|
| Ethernet type | 10/100BASE-T |
|---------------|--------------|

System integration

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|-----------------------|--|
| 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; Auto-MDIX; 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 |
| Color | White |
| Color (RAL) | RAL 9003 Signal white |
| Housing material | Plastic / Metal |
| Hinge material | Metal |

Environmental

| | |
|---|---|
| Operating temperature (°C) | -30 °C – 50 °C for continuous operation; Maximum temperature according to EN 50130-5 dry heat: 60 °C, IR ON |
| Operating temperature (°F) | -22 °F – 122 °F for continuous operation; Maximum temperature according to EN 50130-5 dry heat: 140 °F, IR ON |
| 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-3703-AL Bullet 5MP 3.3-10.2mm IP66 IK10 IR
 Fixed bullet camera for outdoor 30 fps surveillance with H.264/H.265 and IVA Pro Buildings, 5 MP, 3.3-10.2 mm lens, IP66, IK10
 NDAA compliant
 Order number **NBE-3703-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**



<https://www.boschsecurity.com>