

# NDE-8703-RT Fixed dome 6MP HDR 12-38mm PTRZ IP67 FLEXIDOME 8100i



The FLEXIDOME 8100i 6MP camera has a 1/1.8" sensor, starlight and HDR technology at 6MP resolution.

Starlight technology provides low-light sensitivity ensuring highly detailed images even in the most challenging situations. HDR enables the camera to capture video across different light levels and without motion blur and artefacts on moving objects. The camera's remote commissioning functionality ensures installation and commissioning in the minimum amount of time. Using a PC or a mobile device with the Project Assistant app, you can pan, tilt, roll and zoom (PTRZ) and point the camera to the required field of view with a single click, without ever having to touch the camera or lens. The latest CPP14 platform provides powerful processing capabilities and built-in neural processing engine to enable deep learning based IVA Pro video analytics, bringing highly reliable detection of persons and vehicles, even in crowded scenes.



- Remote configuration and commissioning. Pan, Tilt, Roll and Zoom (PTRZ) remotely to set the camera to the required field of view, without having to touch the camera or lens
- Starlight technology with 1/1.8" HD 6MP sensor for next level low-light performance with maximum detail
- High Dynamic Range (HDR) to see every detail in both bright and dark areas of the scene
- IVA Pro brings highly reliable deep-learning based detection of persons and vehicles to scenes ranging from sterile to crowded and congested zones
- Electronic image stabilization (EIS) measures the frequency and amplitude of the device's vibrations to offset their impact on the image

The extreme rugged design is suited for diverse applications in sectors like government, transportation, city and traffic surveillance and education.

# Functions

## Starlight performance

The latest sensor technology combined with the sophisticated image processing and noise suppression results in exceptional sensitivity in color. The excellent low-light performance allows great color performance even with minimum ambient light.

# 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)

The camera comes with IVA Pro Buildings, IVA Pro Perimeter and IVA Pro Privacy pre-installed. Other options can be licensed to optimize the camera analytics for enhanced surveillance capabilities tailored to the application.

The advanced analytics brings highly reliable deeplearning-based detection and tracking of persons and vehicles to scenes ranging from sterile zones to crowded and congested areas. Resilient against false triggers caused by challenging environmental conditions such as rain, wind-induced movements (such as trees), snow, hail, water reflections, shadows, and insects, the camera ensures accurate and reliable object detection, tracking, and classification. A smart set of alarm and counter rules ensures that you are promptly alerted when predefined alarms are triggered.

Configuration effort is made easy with the camera already classifying objects out of the box. With these advanced features, the camera provides comprehensive security coverage across a wide range of environments and scenarios.

# Intelligent Video Analytics Pro (IVA Pro) - optional licenses

With the introduction of IVA Pro Appearance, users can conduct forensic searches based on distinct characteristics, such as color of clothing, bags, hats, or other features, enabling a more precise search of individuals. Furthermore, the integration of IVA Pro Gun Detection enhances security measures by automatically detecting and classifying people brandishing firearms, ensuring comprehensive threat detection.

Additionally, the camera now features IVA Pro Personal Protective Equipment (PPE), designed to detect the proper use of personal protective equipment, which can reduce accident risk and promote health and safety in various environments. IVA Pro Traffic can be licensed to optimize the camera analytics for ITS applications such as counting and classification, as well as Automatic Incident Detection, which are necessary for highway and urban infrastructure planning. IVA Pro License Plate excels in real-time identification of license plates in parking applications or city environments.for automated ticketing systems, traffic enforcement, and smart parking solutions.

## **Camera Trainer**

The Camera Trainer program uses machine learning to allow the user to define objects of interest and generate detectors for them.

## **Auto-calibration**

The camera offers auto-calibration by transforming 2D pixels into 3D real world measures, such as size, speed and geolocation of objects for tracking use cases. AI technology allows the camera to detect and analyze persons and vehicles in the scene to determine calibration parameters. Calibration efforts

are now reduced to a single click, followed by the usual human verification. This reduces the calibration effort or time investment, ensuring optimal accuracy while keeping costs to a minimum.

#### 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 quad 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.

## **Electronic image stabilization**

The image quality of a camera can be affected if its mounting is unstable or prone to vibration. The larger the zoom value, the bigger the impact of these vibrations will be, making images unusable and causing fatigue for the user. The camera's image stabilization algorithm uses the built-in gyro sensor to detect continuous vibration and to correct the shaky video in the vertical and horizontal axis. This results in a stable and smooth video on the monitor. The EIS crop factor is adjustable. This helps the camera deliver exceptional image clarity, by allowing you to optimize the balance between field of view and the maximum vibration amplitude.

## **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:

## 6 MP Camera with 12 mm - 38 mm lens\*

| DORI      | DORI definition | Distance         | Horizontal<br>width |
|-----------|-----------------|------------------|---------------------|
| Detect    | 25 px/m         | 201 m / 591 m    | 131 m               |
|           | 8 px/ft         | 628 ft / 1848 ft | 408 ft              |
| Observe   | 63 px/m         | 80 m / 235 m     | 52 m                |
|           | 19 px/ft        | 264 ft / 778 ft  | 172 ft              |
| Recognize | 125 px/m        | 40 m / 118 m     | 26 m                |
|           | 38 px/ft        | 132 ft / 389 ft  | 86 ft               |
| Identify  | 250 px/m        | 20 m / 59 m      | 13 m                |
|           | 76 px/ft        | 66 ft / 195 ft   | 43 ft               |

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

### Scene modes

Multiple configurable modes are provided with the best settings for a variety of applications. With one click, fully optimized image settings can be selected to suit the conditions. Different scene modes can be selected for different situations such as sodium lighting, fast moving objects or dark environments.

# Resists rain, dust, and tampering with reliable operation across a wide temperature range

Suitable for indoor and outdoor usage. The robust design of the camera is rated to IP66 / IP67 and IK11 standards, safeguarding the camera and its bubble against rain and dust while also offering protection against vandalism and tampering. The camera can operate in a wide ambient temperature range between -50°C up to +60°C (-58°F to +140°F).

## **Full Remote Commissioning**

Installing a professional IP video surveillance camera has never been so easy. In fact, as an installer, you'll never want to go back to the old methods of installing cameras again. We've simplified the installation and commissioning stages to such a degree that they can be done in very little time. With the FLEXIDOME 8100i 6MP camera's remote commissioning functionality there's no need to go up and down ladders. Using a PC or a mobile device with the Bosch Project Assistant app, you can pan, tilt, roll and zoom (PTRZ) and point the camera to the required field of view with a single click - without ever having to touch the camera or lens. Remote configuration and commissioning can also be done at a later stage once all cameras have been installed. Simply connect the Bosch Project Assistant app, available for iOS, Windows or Android to the camera wirelessly to the local network. Or connect to the camera remotely via the network using the camera's web interface or the Bosch Configuration Manager.

## Easy installation

The mechanical design follows the Bosch installation philosophy by using an installation surface mount box (SMB) and easy cable management. Power can be supplied via Power-over-Ethernet (PoE). 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.

The AVF (Automatic Varifocal) feature makes it easy for installers to adjust zoom position without opening the camera. The automatic motorized zoom/ focus adjustment with 1:1 pixel mapping ensures the camera is always accurately focused.

## **Data security**

Special measures ensure the highest level of security for device access and data transport. On initial setup, the camera is only accessible over secure channels and enforces a password. Web browser and viewing client access can be protected using HTTPS or other secure protocols that support state-of-theart TLS 1.2 with updated cipher suites including AES encryption with 256 bit keys. No software can be installed in the camera, and only authenticated firmware can be uploaded. A three-level password protection with security recommendations allows users to customize device access. Network and device access can be protected using 802.1x network authentication with EAP/TLS. Superior protection from malicious attacks is guaranteed by the Embedded Login Firewall, onboard Trusted Platform Module (TPM) and Public Key Infrastructure (PKI) support.

The advanced certificate handling offers:

- 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
- 4096 key length

## Advanced edge recording

Advanced edge recording provides the reliable storage solution possible due to the combination of the following functionalities:

- Dual microSD cards that can be set up as either:
  - Mirrored, for redundant storage
  - Failover, for extended service intervals
  - Extended, for maximum retention time
- Industrial microSD card support allows for extreme lifetime
- Health monitoring on industrial microSD card (slot 1) provides early service indication

## **Cloud-based services**

The device can leverage the Bosch Remote Portal for device management, activation of services, and management of software licenses. This enables you to easily connect your device into a cloud-based platform, where you can manage all your devices in a centralized location.

Using the Bosch Security Cloud, you can configure, troubleshoot, and update supported devices using the browser-based interface or standard tools. With one click on Remote Portal, you can activate additional value-added services, such as Alarm Management in Cloud VMS, or VideoView+. VideoView+ provides an easy-to-use and costeffective solution to remotely connect to your device from anywhere, at any time. Leverage the power of the Bosch cloud to monitor your premises and get notified about any incident. VideoView+ also enables live streaming, locally and from remote, of up to 8 concurrent devices via Video Security Client, or of up to 4 concurrent devices on the Android and iOS app clients. This includes replay and export functionality, as well as forensic search to define and perform search criteria for recorded events.

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.

# **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.

## Modular camera mounts and accessories

A full line of modular camera mounts and accessories are available that allow a consistent design across different platforms and a wide range of installation possibilities.

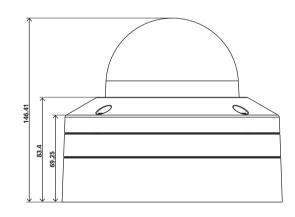
Several dedicated accessories are available that seamlessly fit to the camera and expand the different installation options over previous generations. Available options include: a paintable cover, an oncamera weather protector, a clear, tinted or hydrophilic bubble, in-ceiling mounting kits, a surveillance cabinet with power and fiber optic options and different mounting options.

## **Regulatory information**

| Standards     | Туре   |
|---------------|--|
| Emission      | EN 55032 (class A), EN IEC 61000-6-4,<br>EN 50121-4 (EN 61000-4-2, EN 61000-4-3,<br>EN 61000-4-4, EN 61000-4-5, EN 61000-4-6),<br>CFR 47 FCC, part 15B (class A), ICES-003, AS/<br>NZS CISPR 32              |
| Immunity      | EN 55035, EN IEC 61000-6-2, EN 50130-4<br>(EN 61000-4-2, EN 61000-4-3, EN 61000-4-4,<br>EN 61000-4-5, EN 61000-4-6), EN 50121-4<br>(EN 61000-4-2, EN 61000-4-3, EN 61000-4-4,<br>EN 61000-4-5, EN 61000-4-6) |
| Environmental | EN 50130-5 Class IV-A (EN 60068-2-2,<br>EN 60068-2-5, EN 60068-2-6,<br>EN 60068-2-18, EN 60068-2-27,<br>EN 60068-2-30, EN 60068-2-42,<br>EN 60068-2-52, EN 60068-2-75,                                       |

| Standards            | Туре       | Туре  |  |
|----------------------|------------|---|--|
|                      | comb       | EN 60068-2-78, EN 60529), UL 2043 when<br>combined with NDA-8002-PLEN, Nema TS 2<br>Section 2               |  |
| Safety               | EN 63      | EN 62368-1, UL 62368-1, CSA 62368-1   |  |
| Image performance    | e IEC 6    | 2676-5  |  |
| HD                   | SMP        | SMPTE 296M-2001 (Resolution: 1280x720)  |  |
|                      | SMP        | SMPTE 274M-2008 (Resolution: 1920x1080)   |  |
| Color representation |            | ITU-R BT.709-6  |  |
| ONVIF conforman      | ce EN 50   | 0132-5-2, EN 62676-2  |  |
| Impact protection    | EN 63      | 2262 (IK11)   |  |
| , ,                  |            | 0529 (IP66/IP67), ISO 20653 (IP6K9K),<br>)E (Type 4X)   |  |
| Environment          | EC ar      | 2011/65/EU RoHS (EN IEC 63000), 1999/45/<br>EC and 1907/2006 REACH, 2012/19/<br>EU WEEE, 94/62/EC Packaging |  |
| Marks                |            | CE, cULus, WEEE, RCM, VCCI, BIS, KCC, China<br>RoHS, Cmim   |  |
| Compliance           | NDA        | NDAA compliant  |  |
| Region               | Regulatory | ulatory compliance/quality marks  |  |
| Global               | IEC 62443  | Industrial Cyber Security Capability  |  |
| USA                  | UL CAP     | Cybersecurity Assurance Program   |  |

# Installation/configuration notes



Dimensions in mm (inch)

| Parts in | Parts included             |  |  |
|----------|----------------------------|--|--|
| Quantity | Component                  |  |  |
| 1        | FLEXIDOME 8100i 6MP camera |  |  |
| 1        | T-20 security Torx bit     |  |  |
| 1        | Mini screwdriver           |  |  |

| Quantity | Component                       |
|----------|---------------------------------|
| 1        | IP66 rubber grommet             |
| 1        | IP67 grommet                    |
| 1        | Network patch cable 50 cm       |
| 3        | Identification label            |
| 1        | Quick installation guide        |
| 1        | Safety and security information |

# **Technical specifications**

# Electrical

| PoE input   | PoE IEEE 802.3af / 802.3at Type 1,<br>Class 3<br>PoE and auxiliary power can be con-<br>nected simultaneously for redundant<br>operation |
|---|--|
| Input voltage (VAC)                                 | 24 VAC ±10%  |
| Input voltage (VDC)                                 | 12 VDC - 26 VDC ±10%   |
| Power consumption PoE (W) (typical<br>– maximum)    | 7 W - 12.95 W  |
| Power consumption VAC (VA) (typ-<br>ical – maximum) | 12 VA – 23.3 VA  |
| Power consumption VAC (W) (typ-<br>ical – maximum)  | 6.9 W - 12.6 W   |
| Power consumption VDC (W) (typ-<br>ical – maximum)  | 7.2 W - 19 W   |
| Sensor  |  |
| Total sensor pixels                                 | 6 MP approx  |

| Total sensor pixels   | 6 MP approx.               |
|---|----------------------------|
| Sensor type   | 1/1.8 inch CMOS;<br>2.3 μm |
| Effective pixels (H x V)  | 3,264 x 1,840              |
| Sensitivity   |                            |
| Low light technology  | starlight                  |
| Color (lx) (sensitivity measured ac-<br>cording to IEC 62676 Part 5)      | 0.0885 lx (F2.3)           |
| Monochrome (lx) (sensitivity meas-<br>ured according to IEC 62676 Part 5) | 0.0083 lx (F2.3)           |
| High Dynamic Range (HDR) (dB)   | 120 dB HDR                 |

# Optical

| Lens focal length (mm)       | 12 mm - 38 mm |
|------------------------------|---------------|
| Iris control                 | P-iris        |
| Horizontal field of view (°) | 36° – 12°     |
| Vertical field of view (°)   | 20° – 7°      |
| Lens aperture (/F)           | F1.6-F2.7     |
| Zoom/focus control           | Motorized     |

# Video streaming

| H.264 (ISO/IEC 14496-10); M-   |
|--|
| JPEG; H.265/HEVC   |
| 25 fps, HDR, 3072 x 1728 (5.3 MP)<br>30 fps, HDR, 3072 x 1728 (5.3 MP)<br>25 fps, 3264 x 1840 (6 MP)<br>30 fps, 3264 x 1840 (6 MP)   |
| Multiple configurable streams in<br>H.265; H.264 and M-JPEG; Config-<br>urable framerate and bandwidth;<br>Bosch Intelligent Streaming   |
| 1 fps – 30 fps   |
| <67ms  |
| IP; IBP; IBBP  |
| >55 dB   |
| 6MP 3264 x 1840,<br>5.3MP 3072 x 1728,<br>4.1MP 2688 x 1512,<br>3MP 2304 x 1296,<br>2.8MP (4:3) 1920 x 1440,<br>HD 1080p 1920 x 1080,<br>1.3MP 1536 x 864, 1.3MP (5:4)<br>1280 x 1024,<br>HD 720p 1280 x 720,<br>SD 432p 768 x 432,<br>SD 480p (4:3) 720 x 480,<br>VGA (4:3) 640 x 480 |
|  |
| Mode (standard, fluorescent), Level,<br>Average vs. peak, Speed, Maximum<br>gain; Adjustable   |
|  |

| Shutter modes            | Automatic Electronic Shutter (AES);<br>1/25 min; 1/15,000 max; Default<br>shutter  |
|--------------------------|--|
| Day/night modes          | Auto (adjustable switch points);<br>Color; Monochrome  |
| WDR technology           | HDR  |
| Field of view adjustment | Motorized pan, tilt, roll; Autofocus   |
| Camera functionality     | Mirror image; Rotation 90°; Rotation<br>180°; Rotation 270° including up-<br>right mode; Backlight compensation<br>(BLC); Intelligent dynamic noise re-<br>duction; Contrast enhancement;<br>Sharpness enhancement; Intelligent<br>defog; Pixel counter; Tamper detec-<br>tion; Saturation; Brightness |
| Camera LED               | Auto disable; Enable; Disable  |
| White balance (K)        | 2,000 K - 10,000 K   |
| White balance modes      | Basic; Standard; Dominant color;<br>Manual mode; Hold mode; 4 auto-<br>matic modes; Sodium lamp  |
| Number of privacy masks  | 8 independent areas, fully program-<br>mable   |
| Display stamping         | Name; Logo; Date/time; Alarm mes-<br>sage  |
| Scene modes              | Traffic; Night optimized; Vibrant;<br>Low bitrate; Sports & gaming; Retail;<br>Intelligent AE; Indoor; Outdoor; Li-<br>cense plate recognition   |
| Positioning              | Mounting height; Coordinates   |
| Video content analysis   |  |
| Analysis type            | IVA Pro Buildings; IVA Pro Perimeter;<br>IVA Pro Privacy; Camera Trainer   |
| Alarm triggers           | Any object; Object in field; Line<br>crossing; Enter / leave field; Loiter-<br>ing; Follow route; Idle / removed ob-<br>ject; Counting; Occupancy; Crowd<br>density estimation; Condition<br>change; Similarity search; Flow /<br>counter flow; Objects stopping or<br>starting to move                |
| Object filters           | Duration; Size; Aspect ratio; Speed;<br>Direction; Color; Object classes (6)   |
|                          |  |

| 3D people tracking; Ship tracking;<br>Museum modeCalibration3D auto calibrationNumber of possible alarm rules (sim<br>ultaneously)16Additional functionalitiesTamper detectionSupported analyticsIVA Pro Traffic; IVA Pro Appearance;<br>IVA Pro Personal Protective Equip-<br>ment; IVA Pro Visual Gun Detection;<br>Intelligent Audio Analytics: T3 / T4<br>alarm detectionSupported analyticsVA Pro Traffic; IVA Pro Appearance;<br>IVA Pro Personal Protective Equip-<br>ment; IVA Pro Visual Gun Detection;<br>Intelligent Audio Analytics: T3 / T4<br>alarm detectionStorageStorageInternal storage5-s-pre-alarm-recordingMemory card slotDual micro SDHC; Dual micro SDXC<br>Dual micro SD card up to 2 TB   |                                |   |
|---|--------------------------------|---|
| Number of possible alarm rules (sime data in the second | Tracking modes                 |   |
| ultaneously)Image: Additional functionalitiesAdditional functionalitiesTamper detectionSupported analyticsIVA Pro Traffic; IVA Pro Appearance;<br>IVA Pro Visual Gun Detection;<br>Intelligent Audio Analytics: T3 / T4<br>alarm detectionSupported analyticsVA Pro Dersonal Protective Equipament; IVA Pro Visual Gun Detection;<br>Intelligent Audio Analytics: T3 / T4<br>alarm detectionAvailable with a future FW release:<br>IVA Pro License Plate; IVA Pro Danger<br>ous Goods Signs; IVA Pro License<br>Plate + Make Model; Intelligent Au-<br>dio Analytics: Gunshot detectionStorage5-s-pre-alarm-recordingInternal storage5-s-pre-alarm-recordingMemory card slotDual micro SDHC; Dual micro SDXC<br>Dual micro SD-card slot configura-<br>tionsDual micro SD-card slot configura-<br>tionsMirror (redundant storage); Failover<br>(extended service interval); Extend<br>(maximum retention time); Auto-<br>matic Network ReplenishmentInputs and outputs1EthernetShielded RJ45Audio line out1.5 kOhm typical; 1 VrmsAlarm outputs2Alarm outputs1Power output12 VDC, max 50mASurge protection1 kV; 1 kA to ground (8/20 µs)Fiber optics (sold separately)The Fiber Optic Ethernet Media Con<br>verter kit (VG4-SFPSCKT) installed<br>inside a Surveillance Cabinet  | Calibration                    | 3D auto calibration   |
| Supported analyticsIVA Pro Traffic; IVA Pro Appearance;<br>IVA Pro Personal Protective Equip-<br>ment; IVA Pro Visual Gun Detection;<br>Intelligent Audio Analytics: T3 / T4<br>alarm detectionAvailable with a future FW release:<br>IVA Pro License Plate; IVA Pro Danger<br>ous Goods Signs; IVA Pro License Plate + Make Model; IVA Pro Danger<br>ous Goods Signs; IVA Pro License Plate + Make Model; Intelligent Au-<br>dio Analytics: Gunshot detectionInternal storage5-s-pre-alarm-recordingMemory card slotDual micro SDHC; Dual micro SDXC<br>Dual micro SD card up to 2 TBDual micro SD-card slot configura-<br>tionsMirror (redundant storage); Failover<br>(extended service interval); Extend<br>(maximum retention time); Auto-<br>matic Network ReplenishmentInputs and outputs10 kOhm typical; max. 1 VrmsAudio line in1.5 kOhm typical; 1 VrmsAlarm outputs2Alarm outputs1Power output1.2 VDC, max 50mASurge protection1 kV; 1 kA to ground (8/20 µs)Fiber optics (sold separately)The Fiber Optic Ethernet Media Con<br>verter kit (VG4-SFPSCKT) installed<br>inside a Surveillance Cabinet   | •                              | 16  |
| IVA Pro Personal Protective Equip-<br>ment; IVA Pro Visual Gun Detection;<br>Intelligent Audio Analytics: T3 / T4<br>alarm detectionAvailable with a future FW release:<br>IVA Pro License Plate; IVA Pro<br>Vehicle Make Model; IVA Pro Dager<br>ous Goods Signs; IVA Pro License<br>Plate + Make Model; Intelligent Au-<br>dio Analytics: Gunshot detectionStorageInternal storage5-s-pre-alarm-recordingInternal storage5-s-pre-alarm-recordingDual micro SD-card slot configura-<br>tionsMirror (redundant storage); Failover<br>(extended service interval); Extend<br>(maximum retention time); Auto-<br>matic Network ReplenishmentInputs and outputsMirror<br>10 kOhm typical; max. 1 VrmsAudio line in10 kOhm typical; 1 VrmsAlarm inputs2Alarm outputs1Power output12 VDC, max 50mASurge protection1 kV; 1 kA to ground (8/20 µs)Fiber optics (sold separately)The Fiber Optic Ethernet Media Con<br>verter kit (VG4-SFPSCKT) installed<br>inside a Surveillance Cabinet  | Additional functionalities     | Tamper detection  |
| IVA Pro License Plate; IVA Pro<br>Vehicle Make Model; IVA Pro Danger<br>ous Goods Signs; IVA Pro License<br>Plate + Make Model; Intelligent Au-<br>dio Analytics: Gunshot detectionStorageInternal storage5-s-pre-alarm-recordingMemory card slotDual micro SDHC; Dual micro SDXC<br>Dual micro SD card up to 2 TBDual micro SD-card slot configura-<br>tionsMirror (redundant storage); Failover<br>(extended service interval); Extend<br>(maximum retention time); Auto-<br>matic Network ReplenishmentInputs and outputsShielded RJ45EthernetShielded RJ45Audio line in10 kOhm typical; max. 1 VrmsAlarm inputs2Alarm outputs1Power output1.2 kVDC, max 50mASurge protection1 kV; 1 kA to ground (8/20 µs)Fiber optics (sold separately)The Fiber Optic Ethernet Media Con<br>verter kit (VG4-SFPSCKT) installed<br>inside a Surveillance Cabinet   | Supported analytics            | ment; IVA Pro Visual Gun Detection;<br>Intelligent Audio Analytics: T3 / T4   |
| Internal storage5-s-pre-alarm-recordingMemory card slotDual micro SDHC; Dual micro SDXC;<br>Dual micro SD card up to 2 TBDual micro SD-card slot configura-<br>tionsMirror (redundant storage); Failover<br>(extended service interval); Extend<br>   |                                | IVA Pro License Plate; IVA Pro<br>Vehicle Make Model; IVA Pro Danger<br>ous Goods Signs; IVA Pro License<br>Plate + Make Model; Intelligent Au- |
| Memory card slotDual micro SDHC; Dual micro SDXC<br>Dual micro SD card up to 2 TBDual micro SD-card slot configura-<br>tionsMirror (redundant storage); Failover<br>(extended service interval); Extend<br>(maximum retention time); Auto-<br>matic Network ReplenishmentInputs and outputsShielded RJ45EthernetShielded RJ45Audio line in10 kOhm typical; max. 1 VrmsAudio line out1.5 kOhm typical; 1 VrmsAlarm inputs2Alarm outputs1Surge protection1 kV; 1 kA to ground (8/20 µs)Fiber optics (sold separately)The Fiber Optic Ethernet Media Con<br>verter kit (VG4-SFPSCKT) installed<br>inside a Surveillance Cabinet  | Storage                        |   |
| Dual micro SD card up to 2 TBDual micro SD-card slot configura-<br>tionsMirror (redundant storage); Failover<br>(extended service interval); Extend<br>(maximum retention time); Auto-<br>matic Network ReplenishmentInputs and outputsEthernetShielded RJ45Audio line in10 kOhm typical; max. 1 VrmsAudio line out1.5 kOhm typical; 1 VrmsAlarm inputs2Alarm outputs1Power output12 VDC, max 50mASurge protection1 kV; 1 kA to ground (8/20 µs)Fiber optics (sold separately)The Fiber Optic Ethernet Media Con<br>verter kit (VG4-SFPSCKT) installed<br>inside a Surveillance Cabinet   | Internal storage               | 5-s-pre-alarm-recording   |
| tions (extended service interval); Extend<br>(maximum retention time); Auto-<br>matic Network Replenishment<br>Inputs and outputs<br>Ethernet Shielded RJ45<br>Audio line in 10 kOhm typical; max. 1 Vrms<br>Audio line out 1.5 kOhm typical; 1 Vrms<br>Alarm inputs 2<br>Alarm outputs 1<br>Power output 12 VDC, max 50mA<br>Surge protection 1 kV; 1 kA to ground (8/20 µs)<br>Fiber optics (sold separately) The Fiber Optic Ethernet Media Con<br>verter kit (VG4-SFPSCKT) installed<br>inside a Surveillance Cabinet   | Memory card slot               | Dual micro SDHC; Dual micro SDXC;<br>Dual micro SD card up to 2 TB  |
| EthernetShielded RJ45Audio line in10 kOhm typical; max. 1 VrmsAudio line out1.5 kOhm typical; 1 VrmsAlarm inputs2Alarm outputs1Power output12 VDC, max 50mASurge protection1 kV; 1 kA to ground (8/20 µs)Fiber optics (sold separately)The Fiber Optic Ethernet Media Con<br>verter kit (VG4-SFPSCKT) installed<br>inside a Surveillance Cabinet  |                                | (maximum retention time); Auto-   |
| Audio line in10 kOhm typical; max. 1 VrmsAudio line out1.5 kOhm typical; 1 VrmsAlarm inputs2Alarm outputs1Power output12 VDC, max 50mASurge protection1 kV; 1 kA to ground (8/20 µs)Fiber optics (sold separately)The Fiber Optic Ethernet Media Converter kit (VG4-SFPSCKT) installed inside a Surveillance Cabinet  | Inputs and outputs             |   |
| Audio line out1.5 kOhm typical; 1 VrmsAlarm inputs2Alarm outputs1Power output12 VDC, max 50mASurge protection1 kV; 1 kA to ground (8/20 µs)Fiber optics (sold separately)The Fiber Optic Ethernet Media Converter kit (VG4-SFPSCKT) installed inside a Surveillance Cabinet   | Ethernet                       | Shielded RJ45   |
| Alarm inputs2Alarm outputs1Power output12 VDC, max 50mASurge protection1 kV; 1 kA to ground (8/20 µs)Fiber optics (sold separately)The Fiber Optic Ethernet Media Converter kit (VG4-SFPSCKT) installed inside a Surveillance Cabinet   | Audio line in                  | 10 kOhm typical; max. 1 Vrms  |
| Alarm outputs 1   Power output 12 VDC, max 50mA   Surge protection 1 kV; 1 kA to ground (8/20 µs)   Fiber optics (sold separately) The Fiber Optic Ethernet Media Converter kit (VG4-SFPSCKT) installed inside a Surveillance Cabinet   | Audio line out                 | 1.5 kOhm typical; 1 Vrms  |
| Power output 12 VDC, max 50mA<br>Surge protection 1 kV; 1 kA to ground (8/20 µs)<br>Fiber optics (sold separately) The Fiber Optic Ethernet Media Con<br>verter kit (VG4-SFPSCKT) installed<br>inside a Surveillance Cabinet  | Alarm inputs                   | 2   |
| Surge protection 1 kV; 1 kA to ground (8/20 µs)<br>Fiber optics (sold separately) The Fiber Optic Ethernet Media Con<br>verter kit (VG4-SFPSCKT) installed<br>inside a Surveillance Cabinet   | Alarm outputs                  | 1   |
| Fiber optics (sold separately) The Fiber Optic Ethernet Media Converter kit (VG4-SFPSCKT) installed inside a Surveillance Cabinet   | Power output                   | 12 VDC, max 50mA  |
| verter kit (VG4-SFPSCKT) installed inside a Surveillance Cabinet  | Surge protection               | 1 kV; 1 kA to ground (8/20 μs)  |
|   | Fiber optics (sold separately) | verter kit (VG4-SFPSCKT) installed inside a Surveillance Cabinet  |

Y

|                                    | NBA-7070-PA2) provides the fiber optic interface to the mounted camera  |
|------------------------------------|---|
| Audio                              |   |
| Compression and sampling rate      | G.711 8 kHz; L16 16 kHz; AAC-LC<br>80kbps 16 kHz; AAC-LC 48kbps 16<br>kHz   |
| Minimum signal-to-noise ratio (dB) | >50 dB  |
| Audio streaming                    | Full duplex; Half duplex  |
| Network                            |   |
| Protocols / standards              | IPv4; IPv6; UDP; TCP; HTTP; HTTPS;<br>RTP/SRTP/RTCP; RTSP/RTSPS;<br>IGMP V2/V3; ICMPv6; FTP/Secure<br>FTP; ARP; DHCP; APIPA (Auto-IP,<br>link local address); NTP (SNTP);<br>SNMP (V1, MIBII); SNMP (V3,<br>MIBII); 802.1x, EAP/TLS; DNS;<br>DNSv6; SMTP; iSCSI; UPnP (SSDP);<br>DiffServ (QoS); LLDP; SOAP; CHAP;<br>Digest authentication, SCEP |
| Ethernet type                      | 10/100/1000BASE-T; Auto-sens-<br>ing; Full / half duplex  |
| Conformity                         | ONVIF Profile S; ONVIF Profile G;<br>ONVIF Profile T; Auto-MDIX; ONVIF<br>Profile M   |
| Platform                           |   |
| Common Product Platform            | CPP14   |
| Data security                      |   |
| Crypto coprocessor (TPM)           | RSA 4096 bit; AES/CBC 256 bit   |
| РКІ                                | X.509 certificates  |
| End-to-end encryption              | Full end-to-end with supported VMS  |
| Encryption                         | TLS 1.2; AES 256; AES 128; TLS<br>1.3   |
| Local storage encryption           | XTS-AES   |
| Video authentication               | MD5; SHA-1; SHA-256; Checksum   |
| Firmware protection                | Signed firmware; Secure boot; Soft-<br>ware sealing   |

| Mechanical  |  |
|---|--|
| Material  | Housing: Aluminum  |
| Bubble material                                     | Clear polycarbonate  |
| Pan range (°)                                       | 0° - 361°  |
| Tilt range (°)                                      | -3° – 85°  |
| Roll range (°)                                      | -95° – 95°   |
| Dimensions (Ø x H) (mm)                             | 175 mm x 148 mm  |
| Dimensions (Ø x H) (in)                             | 6.9 in x 5.7 in  |
| Weight (kg)   | 2.30 kg  |
| Weight (lb)   | 5.07 lb  |
| Color (RAL)   | RAL 9003 Signal white  |
| Mounting type                                       | Surface-mounted  |
| Environmental                                       |  |
| Operating temperature (°C)                          | -50 °C – 60 °C; Up to 74°C accord-<br>ing to NEMA TS 2-2021, para<br>2.1.5.1 using fig. 2.1 test profile   |
| Operating temperature (°F)                          | -58 °F – 140 °F; Up to 165ºF ac-<br>cording to NEMA TS 2-2021, para<br>2.1.5.1 using fig. 2.1 test profile |
| Storage temperature (°C)                            | -30 ℃ – 70 ℃   |
| Storage temperature (°F)                            | -22 °F − 158 °F  |
| Cold start temperature (°C)                         | -40 °C   |
| Cold start temperature (°F)                         | -40 °F   |
| Operating relative humidity, non-<br>condensing (%) | 5% - 93%   |
| Operating relative humidity, con-<br>densing (%)    | 5% - 100%  |
| Storage relative humidity (%)                       | 0% - 98%   |
| Impact protection                                   | IK11   |
| IP rating   | IP66; IP67; IP6K9K   |
| Degree of protection                                | NEMA type 4X   |
| Country of origin                                   | Portugal   |
|   |  |

## **Ordering information**

# NDE-8703-RT Fixed dome 6MP HDR 12-38mm PTRZ IP67

Fixed dome camera 6 MP with starlight, HDR, IVA Pro Buildings, IVA Pro Perimeter, IVA Pro Privacy, IP66/ IP67, IK11, H.264/H.265, 12-38 mm lens Order number **NDE-8703-RT** 

## Accessories

## NDA-8000-CBL Clear replacement bubble Clear replacement bubble. Order number NDA-8000-CBL

#### NDA-8000-TBL Tinted Bubble

Tinted bubble for FLEXIDOME IP 8000i and FLEXIDOME 8100i cameras

Order number NDA-8000-TBL

## NDA-8000-HCBL Hydrophilic bubble

Hydrophilic bubble for FLEXIDOME IP 8000i and FLEXIDOME 8100i cameras

Order number NDA-8000-HCBL

NDA-8000-WP On-camera weather protector On-camera weather protector for FLEXIDOME IP 8000i and FLEXIDOME 8100i cameras Order number NDA-8000-WP

## NDA-8000-PC Paintable cover, 4 pcs Paintable cover (4 pieces) for FLEXIDOME IP 8000i and FLEXIDOME 8100i cameras Order number NDA-8000-PC

## NDA-8000-SP In-ceiling mount support kit

Soft ceiling support for in-ceiling mount kit for FLEXIDOME IP 8000i and FLEXIDOME 8100i cameras Order number **NDA-8000-SP** 

NDA-8000-PIP Pendant interface plate, indoor Pendant interface plate for FLEXIDOME IP 8000i and FLEXIDOME 8100i cameras Order number NDA-8000-PIP

NDA-8000-PIPW Pendant interface plate, outdoor Pendant interface plate including weather protector for FLEXIDOME IP 8000i and FLEXIDOME 8100i cameras Order number NDA-8000-PIPW

NDA-8002-PLEN In-ceiling plenum rated kit Plenum-rated in-ceiling mount kit for FLEXIDOME IP 8000i and FLEXIDOME 8100i cameras. Order number NDA-8002-PLEN

# NDA-8002-IC In-ceiling mount kit

In-ceiling mount kit with microphone support for FLEXIDOME 8000i and FLEXIDOME 8100i cameras. Order number **NDA-8002-IC** 

NDA-U-WMT Pendant wall mount Universal wall mount for dome cameras, white Order number NDA-U-WMT

NDA-U-PMT Pendant pipe mount, 12" (31cm) Universal pipe mount for dome cameras, 31 cm, white Order number NDA-U-PMT

NDA-U-PMTE Pendant pipe extension, 20" (50cm) Extension for universal pipe mount, 50 cm, white Order number NDA-U-PMTE **NDA-U-PSMB Pendant wall/ceiling mount SMB** Surface mount box (SMB) for wall mount or pipe mount.

### Order number NDA-U-PSMB

NDA-U-PMAS Pole mount adapter small Pole mount adapter small Universal pole mount adapter, white; small. Order number NDA-U-PMAS

NDA-U-PMAL Pole mount adapter large Universal pole mount adapter, white; large Order number NDA-U-PMAL

NDA-U-RMT Pendant parapet mount Universal roof mount for dome cameras, white, for outdoor usage Order number NDA-U-RMT

NDA-U-CMT Corner mount adapter Universal corner mount, white Order number NDA-U-CMT

NDA-U-PA0 Surveillance cabinet 24VAC Surveillance cabinet, 24 VAC input, 24 VAC output, IP66 Order number NDA-U-PA0

NDA-U-PA1 Surveillance cabinet 120VAC Surveillance cabinet, 100 - 120 VAC 50/60 Hz input, 24 VAC output, IP66 Order number NDA-U-PA1

NDA-U-PA2 Surveillance cabinet 230VAC Surveillance cabinet, 230 VAC input, 24 VAC output, IP66

Order number NDA-U-PA2

**NDA-U-WMP Wall mount plate** Back plate for universal wall mount, corner mount and pole mount, white, IP66 Order number **NDA-U-WMP** 

NDA-U-PMTS Pendant pipe mount, 4" (11 cm) Universal pendant pipe mount for dome cameras, 11 cm (4"), white Order number NDA-U-PMTS

**NDA-U-DWMT Dual pendant wall mount** Universal dual wall mount for dome cameras Order number **NDA-U-DWMT** 

**LTC 9230/01 Parapet roof mount adapter** Flat Roof Mount Adapter for mounting a unit in an upright position on a flat surface. Order number **LTC 9230/01** 

NBA-7070-PA0 Surveillance cabinet 24VAC Surveillance cabinet, 24 VAC, IK10 Order number NBA-7070-PA0

NBA-7070-PA1 Surveillance cabinet 120VAC Surveillance cabinet, 120 VAC, IK10 Order number NBA-7070-PA1

NBA-7070-PA2 Surveillance cabinet 230VAC Surveillance cabinet, 230 VAC, IK10 Order number NBA-7070-PA2

NDA-8000-CND Conduit adapter, 4 pcs Conduit adapter for cameras, 4 pcs Order number NDA-8000-CND

## **Software Options**

## **MVC-IVA-TRA IVA Pro Traffic**

Video analytics software based on deep neural network technology for traffic monitoring and Automatic Incident Detection. Order number **MVC-IVA-TRA** 

# **MVC-IVA-APC IVA Pro Appearance**

Video analytics software based on deep neural network technology for extracting people appearance for a later forensic search; can be used as a surveillance or counting solution

# Order number MVC-IVA-APC

# **MVC-IVA-PPE IVA Pro PPE**

Video analytics software based on deep neural network technology for detecting personal protective equipment.

Order number MVC-IVA-PPE

## MVC-IVA-LPR IVA Pro License Plate

Video analytics software based on deep neural network technology for detecting license plate information. Order number **MVC-IVA-LPR** 

#### MVC-IVA-MMR IVA Pro Vehicle Make Model

Video analytics software based on deep neural network technology for detecting vehicle information. Order number **MVC-IVA-MMR** 

## **MVC-IVA-DGS IVA Pro Dangerous Good Signs**

Video analytics software based on deep neural network technology for detecting dangerous good signs. Order number **MVC-IVA-DGS** 

# MVC-IVA-LPRX IVA Pro License Plate + Make Model

Video analytics software based on deep neural network technology for detecting license plate and vehicle information.

Order number MVC-IVA-LPRX

# **MVC-IVA-VGD IVA Pro Visual Gun Detection**

Video analytics software based on deep neural network technology, designed to detect upright persons and brandished guns.

Order number MVC-IVA-VGD

**MVC-IAA-GUN Gunshot Detector License, perpetual** Gunshot Detector License, perpetual Order number **MVC-IAA-GUN** 



https://www.boschsecurity.com