NBE-7604-AL Bullet camera 8MP IP66 IK10

DINION inteox 7100i IR

- Open platform that allows third-party apps from the Application store from Azena
- H.265 reduces bit rate by up to 80%
- 8MP (4K UHD) for exceptional detail
- Built-in Intelligent Video Analytics to trigger alerts and quickly retrieve data with the highest levels of accuracy

The NBE-7604-AL camera is “Driven by OSSA”, ensuring seamless connectivity with the Azena Application Store to add third-party software apps easily that meet customer-specific requirements. The camera delivers high image quality with 4K resolution for demanding security and surveillance requirements.

Intelligent open, flexible, and extendable camera platform
The camera has a powerful, embedded processor with dedicated hardware to support advanced machine learning and neural-network-based Video Analytics. All cameras with this platform have high image quality, built-in Video Analytics, intelligent bitrate management, and the highest levels of data security. The platform also gives you the flexibility to customize your camera to your specific requirements.
The camera platform integrates with the cloud infrastructure of Azena for app management across devices. Also, Bosch offers advanced device management and services through the Bosch Remote Portal (https://remote.boschsecurity.com/). From the Bosch Remote Portal you can (remotely):

- Complete initial configuration of your online and connected Bosch devices.
- Update firmware for single or multiple devices.
- Manage certificates through Configuration Manager or the web interface of your camera.
- Monitor the health of and receive alerts for your connected Bosch devices.
- Connect your Bosch devices to the Azena portal for app management.

Functions

Intelligent streaming
Smart encoding capabilities reduce the bandwidth consumption to extremely low levels.
The camera is capable of triple streaming which allows the camera to deliver independent, 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 80% compared to a standard camera.

H.265 high-efficiency video encoding
The camera is designed on the most efficient and powerful H.264 and H.265/HEVC encoding platform. The camera is capable of delivering high-quality and high-resolution video with very low network load. With a doubling of encoding efficiency, H.265 is the compression standard of choice for IP video surveillance systems.

More flexibility in streaming capabilities
The camera has three independent encoder streams. Users can configure each stream individually to change the video resolution and the frame rate. Users have two options:

1. Let the camera deliver what is possible based on its encoding performance across the streams equally.
2. Select one of the three streams to be prioritized, for example, to guarantee “quality of service” for the recording stream.

Users can select the coding standard (H.264/H.265) for each stream.
Each stream also has its own set of 8 encoder profiles that users can configure.

Recording and storage management
Recording management can be controlled by the Bosch Video Recording Manager application, or the camera can use local storage and iSCSI targets directly without any recording software.
Local storage can be used for recording "at the edge" or for Automatic Network Replenishment (ANR) technology to improve the overall recording reliability. Pre-alarm recording in RAM reduces bandwidth consumption on the network and extends the effective life of the memory card.

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

Intelligent Video Analytics on the edge
This intelligence-at-the-edge concept allows a decision on which videos are captured based on video content analysis. By only selecting alarm video for streaming or recording, less bandwidth and storage is used.
Alarm conditions can be signaled by a relay output on the unit or an alarm connection, to stream video to a decoder or video management system. Alarms can also be transmitted to a video management system to start extended alarm scenarios.
As well as creating alarms, Intelligent Video Analytics produces metadata that describes the content of the analyzed scene. This metadata is sent over the network—and may also be recorded—together with the video stream.
With a future-proof design, the camera can tackle new use cases by delivering more reliable detections and thus more insights on what is happening in a scene. Based on the open platform principle, these capabilities are leveraged by Intelligent Video Analytics by Bosch as well as by third-party apps from the Application store from by Bosch as well as by third-party apps from the Application store from Azena.

Camera Trainer
Based on examples of target objects and non-target objects, the Camera Trainer program uses machine learning to allow the user to define objects of interest and generate detectors for them. In contrast to the moving objects that the Intelligent Video Analytics application detects, the Camera Trainer program detects both moving and non-moving objects and classifies them immediately. Using Configuration Manager, you can configure the Camera Trainer program using both live video as well as recordings available through the respective camera. The resulting detectors can be downloaded and uploaded for distribution to other cameras.
A free of charge license is required to activate the Camera Trainer program.

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:

8 MP camera with 3.6 mm - 10 mm lens

DORI	DORI definition	Distance 3.6 mm/10 mm	Horizontal width
Detect	25 px/m (8 px/ft)	68 m/181 m (212 ft/565 ft)	154 m (480 ft)
Observe	63 px/m (19 px/ft)	27 m/72 m (89 ft/238 ft)	61 m (202 ft)
Recognize	125 px/m (38 px/ft)	14 m/36 m (45 ft/119 ft)	31 m (101.1 ft)
Identify	250 px/m (76 px/ft)	7 m/18 m (22 ft/60 ft)	15 m (50.5 ft)

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-the-art TLS 1.2 with updated cipher suites including AES encryption with 256 bit keys. Only authenticated firmware can be uploaded. A three-level password protection with security recommendations allows users to customize device access.
Superior protection from malicious attacks is guaranteed by the Embedded Login Firewall, on-board Secure Element (supporting main Trusted Platform Module functionality) 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

Only trusted and authenticated third-party apps can be uploaded. A safe sandbox environment enables the secure execution of trusted third-party software.

There is full transparency on individual app requirements to access system resources (listed in the Application store from Azena).

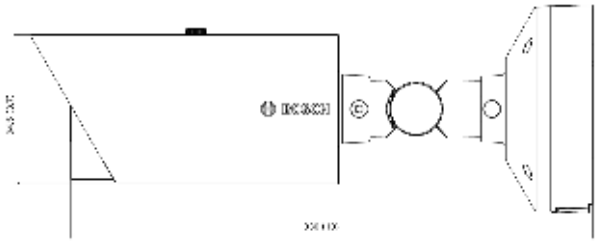
System integration and ONVIF conformance
The camera conforms to the ONVIF Profile S, ONVIF Profile G, ONVIF Profile M, and ONVIF Profile T specifications. For H.265 configuration, the camera supports Media Service 2, which is part of ONVIF Profile T. Compliance with these standards guarantees interoperability 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

Standards	Type
Emission	EN 50121-4 EN 55032 (class B) CFR 47 FCC part 15 (class B)
Immunity	EN 50121-4 EN 50130-4
Environmental	EN 50130-5 (Class IV) EN 50581 RoHS EU, 2011/65/EU WEEE EU, 2012/19/EU Packaging EU, 94/62/EU N2580-1 (Bosch standard) N33.6 (Bosch standard)
Safety	EN 62368-1 UL 62368-1 IEC 62368-1 EN 62471 (Eye safety for IR)
ONVIF conformance	EN 50132-5-2 EN 62676-2
Impact protection	EN 62262 (IK10)
Water/dust protection	EN 60529 (IP66) UL50E (Type 4X)
Marks	CE, FCC, WEEE, cULus, C-Tick, VCCI

Region	Regulatory compliance/quality marks
Great Britain	UKCA
Europe	CE

Installation/configuration notes



Parts included

Quantity	Component
1	DINION inteox 7100i IR camera
1	Quick Installation Guide
1	Safety instructions

Technical specifications

Power	
Input voltage	PoE 802.3at Type 2, Class 4 24 VAC ±10% PoE and auxiliary power can be connected simultaneously for redundant operation
Power Consumption (typical / maximum)	PoE+: Max. 25.5 W 24 VAC: 7.1 W - 25 W/ 13 W - 25 W

Sensor	
Sensor type	1/1.8-inch CMOS
Total sensor pixels	3840 (H) x 2160 (V), 8MP (approx.)

Video performance - Sensitivity	
Sensitivity - (3200K, reflectivity 89%, F1.5, 30IRE)	
Color	0.189 lux
Mono	0.0316 lux
With IR	0.0 lx

Dynamic range	
Wide Dynamic Range	87 dB WDR
Measured according to IEC 62676 Part 5	67 dB WDR

Night vision	
Distance	40 m (131 ft)

Night vision	
LED	High efficiency LED array, 850 nm

Optical	
Lens	3.6 to 10 mm, P-iris lens (IR corrected) F-stop 1.5
Adjustment	Motorized zoom/focus
Iris control	P-iris control
Day/Night	Switchable IR-cut filter
Field of view	Wide: 97° x 53° (H x V) Tele: 46° x 30° (H x V)

Platform	
Common product platform	CPP13

Video streaming	
Video compression	H.265; H.264; M- JPEG
Sensor modes	30 fps, 3840 x 2160 (8 MP)
Streaming	Multiple configurable streams in H.264, H.265 and M-JPEG, configurable frame rate and bandwidth. Regions of Interest (ROI) Bosch Intelligent Streaming
Camera latency	120 ms (8 MP, 30 fps)
GOP structure	IP
Frame rate	1-30 fps
Signal-to-Noise Ratio (SNR)	>55 dB

Video resolution (H x V)	
4K UHD	3840 x 2160
5 MP	2560 x 1440
1080p HD	1920 x 1080
1.3 MP	1536 x 864
720p HD	1280 x 720
480p SD	768 x 342

Video resolution (H x V)	
SD 4:3 (cropped)	512 x 480

Camera installation	
Mirror image	On / Off
Rotate	0° / 90° upright / 180° / 270° upright
Camera LED	Automatic
Camera view wizard	Zoom, autofocus

Video functions - color	
Exposure control	Automatic, Manual
Manual exposure control adjustments	Shutter, Gain, Iris
Day / Night	Automatic, Color, Monochrome
Zoom position / Focus position	One push auto focus
White balance	Automatic, Manual
Manual white balance adjustments	Red gain, Blue gain

Video content analysis	
Analysis type	Intelligent Video Analytics
Configurations	Silent VCA / Profile1/2 / Scheduled / Event triggered
Alarm rules (combinable)	Any object, Object in field, Line crossing, Enter / leave field, Loitering, Follow route, Idle / removed object, Counting, Occupancy, Crowd density estimation, Condition change, Similarity search, Flow / counter flow
Object filters	Duration, Size, Aspect ratio, Speed, Direction, Color, Object classes (4)
Tracking modes	Standard (2D) tracking, 3D tracking, 3D people tracking, Ship tracking, Museum mode
Calibration / Geolocation	Automatic, based on gyro sensor, focal length and camera height
Tamper detection	Maskable

Additional functions	
Privacy Masking	One area, fully programmable

Additional functions	
Display stamping	Name; Logo; Time; Alarm message

Local storage	
Memory card slots	microSDHC / microSDXC SD card slot
Industrial SD cards	Extreme lifetime

Input/output	
Audio signal line in	10 kOhm typical; 1 Vrms max
Audio signal line out	16 Ohm typical; output 0.875 Vrms
Alarm input	1 input, activation voltage: +3.3 VDC to +40 VDC
Alarm output	2 outputs, maximum: 30 VAC or +40 VDC, 0.5 A continuous, 10 VA
Ethernet	RJ45
Surge protection	Ethernet: 1 kV to ground (8/20 µs pulse)

Audio streaming	
Standard	G.711, 8 kHz sampling rate L16, 16 kHz sampling rate AAC-LC, 48 kbps at 16 kHz sampling rate AAC-LC, 80 kbps at 16 kHz sampling rate
Signal-to-Noise Ratio	>50 dB
Audio Streaming	Full-duplex / half duplex

Network	
Protocols	IPv4, IPv6, UDP, TCP, HTTP, HTTPS, RTP/RTCP, IGMP V2/V3, ICMP, ICMPv6, RTSP, FTP, ARP, DHCP, NTP (SNTP), 802.1x, DNS, DNSv6, DDNS (DynDNS.org, selfHOST.de, no-ip.com), SMTP, iSCSI, UPnP (SSDP), DiffServ (QoS), LLDP, SOAP, Dropbox™, CHAP, digest authentication
Encryption	TLS1.0/1.2, AES128, AES256
Ethernet	10/100/1000 Base-T, auto-sensing, half/full duplex
Connectivity	Auto-MDIX
Interoperability	ONVIF Profile S; ONVIF Profile GONVIF Profile M ; ONVIF Profile T

Network	

Data security	
Secure Element (“TPM”)	RSA 4096 bit, AES/CBC 256 bit
PKI	X.509 certificates
Encryption	Full end-to-end encryption with supported VMS Network: TLS1.0/1.2, AES128, AES256 Local storage: XTS-AES
Video authentication	checksum, MD5, SHA-1, SHA-256

Mechanical	
Dimensions (Ø x H)	96 x 330 mm (3.8 x 13 in.)
Weight (approx.)	2.1 kg (4.63 lbs)
Mounting	Surface mount
Color	White (RAL9003)

Environmental	
Operating temperature (continuous)	-40 °C to +50 °C (-40 °F to +122 °F)
Storage temperature	-30 °C to +70 °C (-22 °F to +158 °F)
Humidity	5% to 93% relative humidity non condensing 5% to 100% relative humidity condensing
Storage humidity	Up to 98% relative humidity
Impact resistance	IK10
Water/dust protection	IP 66 and NEMA type 4X

Ordering information

NBE-7604-AL Bullet camera 8MP IP66 IK10
Fixed bullet camera 8MP H.265 IVA IP66 IK10 IR running an open camera platform
NDAA compliant
Order number **NBE-7604-AL | F.01U.394.676**

Accessories

NDA-3080-CND Conduit adapter, M20
M20 conduit adapter for cameras
Order number **NDA-3080-CND | F.01U.396.506 F.01U.379.489**

NDA-U-PMAS Pole mount adapter small
Pole mount adapter small
Universal pole mount adapter, white; small.
Order number **NDA-U-PMAS | F.01U.324.943**

NBA-7080-PMIP Pole, corner, 4S adapter
Pole and corner mount adapter for the DINION IP 3000i IR and DINION inteox 7100i IR families
Order number **NBA-7080-PMIP | F.01U.391.127**

Services

EWE-D71IR-IW 12 mths wrty ext inteox 7100i IR
12 months warranty extension
Order number **EWE-D71IR-IW | F.01U.396.736**

Represented by:

Europe, Middle East, Africa:
Bosch Security Systems B.V.
P.O. Box 80002
5600 JB Eindhoven, The Netherlands
Phone: + 31 40 2577 284
www.boschsecurity.com/xc/en/contact/
www.boschsecurity.com

Germany:
Bosch Sicherheitssysteme GmbH
Robert-Bosch-Ring 5
85630 Grasbrunn
Tel.: +49 (0)89 6290 0
Fax:+49 (0)89 6290 1020
de.securitysystems@bosch.com
www.boschsecurity.com

North America:
Bosch Security Systems, LLC
130 Perinton Parkway
Fairport, New York, 14450, USA
Phone: +1 800 289 0096
Fax: +1 585 223 9180
onlinehelp@us.bosch.com
www.boschsecurity.com

Asia-Pacific:
Robert Bosch (SEA) Pte Ltd, Security Systems
11 Bishan Street 21
Singapore 573943
Phone: +65 6571 2808
Fax: +65 6571 2699
www.boschsecurity.com/xc/en/contact/
www.boschsecurity.com