BOSCH

NCE-7703-FK-GOV Fixed dome 6MP corner IR
FLEXIDOME corner 7100i IR

HDR | IP67 | IVA | INTELLIGENT

▶ 131° Horizontal and 96° Vertical field of views for complete scene coverage with no blind spots

▶ HDR and intelligent IR illumination with invisible IR (940 nm) for better images in bright and dark scenes

▶ Corner-mount and anti-ligature (no-grip) design for maximum safety with quick and easy installation and set-up

▶ Hard exterior shell to withstand the harshest environments

▶ Built-in Intelligent Video and Audio Analytics to trigger relevant alerts and quickly retrieve data

The FLEXIDOME corner 7100i IR is a discreet and vandal-resistant corner mount camera, featuring an anti-ligature (no-grip) design. The device provides a detailed and complete overview of any room with no blind spots, and the smart invisible IR keeps image quality consistent even in complete darkness or low lighting conditions. These allow 24/7 effective surveillance in high risk and vandal prone applications. The camera has an IK10+ 50J design to protect itself against vandalism. Additionally, with its wide range of inputs and outputs, such as Alarm and Audio, it can be even used for more interactive systems.
Built-in AI based Intelligent Video Analytics enriches full situational awareness and triggers relevant alerts creating a sense of security and comfort for environments that are highly dangerous and stressful. Intelligent Audio Analytics gives meaning to the sounds it captures, for example, the camera can differentiate a gunshot from a random loud noise.

Functions

Corner-mount, anti-ligature and vandal-resistant design
The hardware design allows a perfectly flush fit into the corner of a room securing an anti-ligature (no-grip) install protecting it from attempts to detach or disable the camera. An elevated housing allows for up to 10 cm (4 in) of space behind the camera to accommodate a single gang box and to hide additional wiring.
To withstand and survive a harsh and aggressive environment, the camera is equipped with a hard shell capable of handling direct heavy impacts up to IK10+ 50J (IK11), and tight sealed installation for IP67 water resistance to enable the use of pressures washers for maintaining the camera clear view.

6MP resolution with no blind spots
With high-resolution 6 MP images, the camera provides a high level of detail over the 131° field of view. By offering a 4:3 aspect ratio, the image is optimized to view an entire room from wall to wall and ceiling to floor. It offers 30 fps to ensure real-time motion in your scenes.

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.

The actual dynamic range of the camera is measured using Opto-Electronic Conversion Function (OECF) analysis according to IEC 62676 Part 5. This method is used to provide standardized measurements, which can be used to compare different cameras.

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:

DORI	PPM	Distance	Horizontal
Detection	25 px/m (8 px/ft)	25,7 m (80,2 ft)	112,6 m (352,0 ft)
Observation	63 px/m (19 px/ft)	10,2 m (33,8 ft)	44,7 m (148,2 ft)
Recognition	125 px/m (38 px/ft)	5,1 m (16,9 ft)	22,5 m (74,1 ft)
Identification	250 px/m (76 px/ft)	2,6 m (8,4 ft)	11,3 m (37,1 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
The camera has a very intuitive user interface that allows fast and easy configuration. Multiple preset configurable modes are provided with the best settings for a variety of applications. Different scene modes can be selected for different situations, such as sodium lighting or dark environments.

Invisible Infrared Illumination
Equipped with invisible 940nm IR LEDs, the camera can provide detailed and consistent images in pitch dark up to 15m (50ft) away from the camera, depending on the scene. Adding intelligent IR capability, the camera can auto-adjust the IR intensity to reduce overexposure and does not require constant manual calibration based on lighting conditions and target object distance from the camera.
The use of intelligent IR also allows up to 5 zones that can each have its independent IR intensity. With this manual or automatic control it can be tailored for any application. Additionally, the IR LED can be switched on/off to reduce attention towards the camera or a covert operation.

Intelligent Video Analytics Pro (IVA Pro)

The camera comes with the IVA Pro Building and the IVA Pro Perimeter pre-installed and brings highly reliable deep learning-based-detection and tracking of persons and vehicles to scenes ranging from sterile zones to crowded and congested scenes. A smart set of alarm rules allows to alert you when predefined alarms are triggered, and to forensically search with high efficiency through recordings. Configuration effort is minimized and made easy by removing the need for calibration.

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.

Intelligent Audio Analytics
The device has an integrated microphone array with three digital microphones for Intelligent Audio Analytics. This is a powerful AI-driven audio signal processing algorithm built to detect and identify target sounds from the ambient sound. It is powered by SoundSee technology and developed to improve operations of the International Space Station (ISS). A set of sound detectors identify sound events such as gunshot (perpetual license) and T3 / T4 alarms (pre-installed). The sound detectors trigger an alarm functionality to alert the operator when the sound event matches an audio signature of a sound detector. Without the need to record audio, Intelligent Audio Analytics generates metadata that is seamlessly integrated with Bosch' Intelligent Video Analytics metadata stream.
The device is not only able to classify sounds, but also to provide an approximate location of the sound. If required by local laws, the microphone can be permanently blocked via a secure license key. As Intelligent Audio Analytics is under development, the available Sound Detectors and features will dependent on the camera FW version.

Two-way audio and built-in microphone array
Two-way audio allows the operator to communicate with visitors or intruders via an external audio line input and output. Alternatively, there is an integrated microphone array to capture crisp and clear audio. By using the integrated or external microphone, audio detection can be used to generate alarms to

alert the security operator quicker and act more proactively. If required by local laws, the microphone can be blocked via a secure license key.

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 provides early service indications

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. It also supports RSA encryption key lengths of up to 4096 bits, ensuring data safety beyond 2030. The 802.1x network authentication with EAP/TLS supports TLS 1.2 with updated cipher suites including AES 256 encryption. 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

H.265 high efficiency video encoding and Intelligent Dynamic Noise Reduction

Using the most efficient and powerful H.264 and H.265/HEVC encoding platform enables 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.
Intelligent Dynamic Noise Reduction actively analyzes the contents of a scene and reduces noise artifacts accordingly. The low noise image and the efficient H.265 compression technology provide clear images while reducing bandwidth and storage by up to 50 %

compared to other H.265 cameras. Resulting in reduced bandwidth streams that retain a high image quality and smooth motion. The camera provides the most usable image possible.

Cloud-based services

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 cost-effective 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.

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.
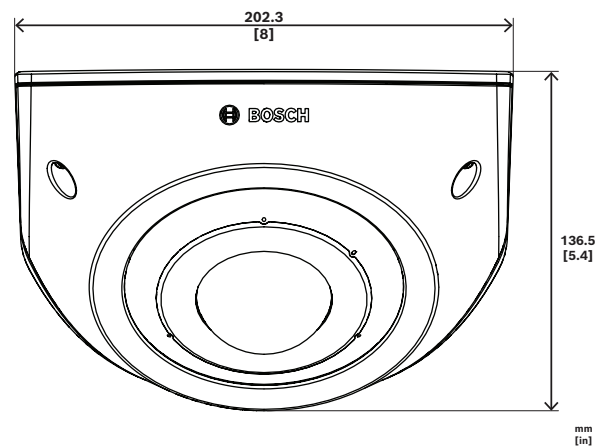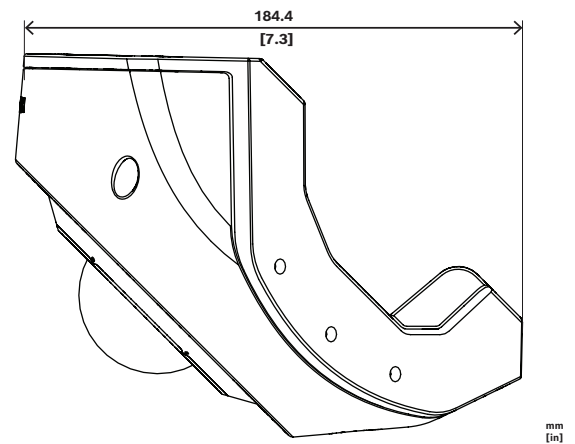Third-party integrators can easily access the internal feature set of the camera for integration into large projects. Visit the Bosch Integration Partner Program (IPP) website (ipp.boschsecurity.com) for more information.

Regulatory information

Type	Standard
Emission	EN 55032 (Class A)
	EN-IEC 61006-6-4
	EN IEC 61000-3-2

Type	Standard
	EN IEC 61000-3-3
	CFR 47 FCC part 15 (Class A)
	ICES-003 Issue 7
	ANSI C63.4-2014
	AS/NZS CISPR 32:2015 + A1:2020
	VCCI-CISPR 32:2016
Immunity	EN 55035
	EN 50130-4
	EN 50121-4
	EN 61000-4-2
	EN 61000-4-3
	EN 61000-4-4
	EN 61000-4-5
	EN 61000-4-6
	EN 61000-4-8
	EN 61006-4-11
Environmental	EN 50130-5 (Class II)
	EN 60068-2-6
	EN 60068-2-27
	EN IEC 63000 (RoHS)
	RoHS EU, 2011/65/EU and 2015/863/EU
	WEEE EU, 2012/19/EU
	California Proposition 65
Safety	IEC 62368-1
	EN 62368-1
	CSA/UL 62368-1:2019
Impact protection	EN 62262 (IK10+ 50J)
Ingress protection	EN 60529 (IP67)
	NEMA 250 (4X)
Image performance	IEC 62676-5
ONVIF conformance	EN 50132-5-2
	EN 62676-2
IR lighting	EN IEC 62471
Marks	CE, cULus, RCM, WEEE, VCCI, BIS, CMIM, UKCA, FCC

Region	Regulatory compliance/quality marks	
Global	IEC 62443	Industrial Cyber Security Capability
USA	UL CAP	Cybersecurity Assurance Program

Installation/configuration notes

Parts included

Quantity	Component
1	FLEXIDOME corner 7100i IR camera
1	Corner mount box
1	Face plate
1	IR cover
1	TR20 Allen key for camera installation
1	RJ-45 punch-through aid
2	M20 rubber grommets (attached to the camera)
3	MAC address labels
1	Quick Installation Guide
1	Safety and security information manual

Technical specifications

Electrical

PoE input	PoE IEEE 802.3af / 802.3at Type 1, Class 3 PoE and auxiliary power can be connected simultaneously for redundant operation
Input voltage (VAC)	24 VAC
Input voltage (VDC)	12 VDC
Power consumption PoE (W) (typical – maximum)	5.7 W – 10.5 W
Power consumption VDC (W) (typical – maximum)	6 W – 10.8 W
Power consumption VAC (W) (typical – maximum)	5.9 W – 10.5 W

Sensor

Total sensor pixels	6 MP approx.
Sensor type	1/1.8 inch CMOS
Effective pixels (H x V)	2,816 x 2,112

Sensitivity

Sensitivity	30 IRE
Color (lx) (sensitivity measured according to IEC 62676 Part 5)	0.072 lx
Monochrome (lx) (sensitivity measured according to IEC 62676 Part 5)	0.014 lx (0 with IR)
High Dynamic Range (HDR) (dB)	120 dB

Optical

IR corrected	Yes
Day/Night	Switchable IR-cut filter
Horizontal field of view (º)	131.10°
Vertical field of view (º)	96.50°
Lens aperture (/F)	2.40 /F
Lens focal length (mm)	2.50 mm

Night vision

IR function	On; Off; Auto; Intelligent IR
IR intensity	Automatic; Intelligent intensity; 5 controllable zones
LED	940 nm
Distance	Up to 15 m (50ft)

Platform

Common Product Platform	CPP14
Memory (RAM) (MB)	2,048 MB; 8,192 MB flash

Video streaming

Frame rate (fps)	1 fps – 30 fps
GOP structure	IP; IBP; IBBP
Video compression	H.264 (ISO/IEC 14496-10); M-JPEG; H.265/HEVC
Streaming	4 configurable streams in H.265; H.264 and M-JPEG; Configurable framerate and bandwidth; Bosch Intelligent Streaming

Video functions

ALC mode	Standard; Fluorescent; Level; Average vs. Peak; Speed; Priority - dark vs. bright
Day/night modes	Auto (adjustable switch points); Color; Monochrome
Shutter modes	Automatic Electronic Shutter (AES); Default shutter; 1/30,000 max
Camera functionality	Flip image; Geolocation; Lens wizard; Region of interest; Audio detection; Backlight compensation (BLC); Intelligent auto exposure; Intelligent dynamic noise reduction; Contrast enhancement; Sharpness enhancement; Pixel counter; Camera view wizard; Tamper detection; Display stamping; Color hue
White balance (K)	2,000 K – 10,000 K
Display stamping	Name; Logo; Date/time; Alarm message; Time
WDR technology	HDR
Number of privacy masks	8

Video content analysis

Analysis type	Camera trainer; Intelligent Video Analytics Pro: IVA Pro Buildings; Intelligent Video Analytics Pro: IVA Pro Perimeter; Intelligent Audio Analytics (license)
Calibration	Automatic based on gyro sensor, focal length, and camera height
Additional functionalities	Tamper detection; Loud noises detection; T3/T4 alarm detection (pre-installed); Gunshot detection (licensed)
Alarm triggers	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; Tampering; 3D tracking; Audio detection; Objects stopping or starting to move
Number of possible alarm rules (simultaneously)	16
Object filters	Duration; Size; Aspect ratio; Speed; Direction; Color; Object classes (4); Object classes (2)
Tracking modes	Standard (2D) tracking; Ship tracking; Museum mode

Storage

Memory card slot	Micro SDHC; Micro SDXC; Micro SD
Industrial SD cards	Extreme lifetime and health monitoring support that provides early service indication

Inputs and outputs

Ethernet	Shielded RJ45
Alarm inputs	1
Alarm outputs	1
Microphone	Integrated array with 3 digital MEMS audio sensors
Audio line in	10 kOhm typical; max. 0.707 Vrms
Audio line out	160 kOhm typical; 0.707 Vrms

Audio

Compression and sampling rate	AAC-LC 48kbps 16 kHz
Audio input	Built-in microphone; Line-in; Mic-level input
Audio output	Line-out
Minimum signal-to-noise ratio (dB)	>50 dB
Audio streaming	Full duplex; Half duplex

Network

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
Ethernet type	10/100/1000BASE-T; Auto-sensing; Full / half duplex
Conformity	ONVIF Profile S; ONVIF Profile G; ONVIF Profile T; ONVIF Profile M
Cloud services	Stratocast Genetec; Remote Portal

Data security

Crypto coprocessor (TPM)	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; TLS 1.1; 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

Mechanical

Color (RAL)	RAL 9003 Signal white
Bubble material	Clear polycarbonate, clear with UV blocking antiscratch coating

Dimensions (H x W x D) (mm)	136.50 mm x 184.4 mm x 202.30 mm
Dimensions (H x W x D) (in)	5.40 in x 7.30 in x 8 in
Weight (kg)	1.90 kg
Weight (lb)	4.20 lb

Environmental

Operating temperature (℃)	-10 ℃ – 50 ℃
Operating temperature (℉)	14 ℉ – 122 ℉
Storage temperature (℃)	-30 ℃ – 70 ℃
Storage temperature (℉)	-22 ℉ – 158 ℉
Operating relative humidity, non-condensing (%)	5% – 93%
Operating relative humidity, condensing (%)	5% – 100%
Storage relative humidity (%)	0% – 98%
IP rating	IP67
Impact protection(EN 62262)	IK10+50J (IK11)
Degree of protection	NEMA type 4X
Country of origin	Taiwan

Ordering information

NCE-7703-FK-GOV Fixed dome 6MP corner IR
Vandal resistant 6 MP corner camera with IVA Pro, Intelligent Audio Analytics, HDR, 940nm IR and IP67 protection
NDAA and TAA compliant.
Available in US only
Order number **NCE-7703-FK-GOV**

Accessories

MSD-064G IP SECURITY MICROSD CARD 64GB
64 GB industrial microSD card with health status monitoring
Order number **MSD-064G**

MSD-128G IP SECURITY MICROSD CARD 128GB
128 GB industrial microSD card with health status monitoring
Order number **MSD-128G**

MSD-256G IP SECURITY MICROSD CARD 256GB
256 GB industrial microSD card with health status monitoring
Order number **MSD-256G**

NPD-5001-POE Midspan, 15W, single port, AC in
Power-over-Ethernet midspan injector for use with PoE enabled cameras; 15.4 W, 1-port
Weight: 200 g (0.44 lb)
Order number **NPD-5001-POE**

NPD-5004-POE Midspan, 4 port x 15W, AC in
Power-over-Ethernet midspan injector for use with PoE enabled cameras; 15.4 W, 4-ports
Weight: 620 g (1.4 lb)
Order number **NPD-5004-POE**

NDA-7080-CBB Conduit back box, corner
Conduit back box, corner
Order number **NDA-7080-CBB**

NDA-7080-FP Replacement face plate, corner
Replacement face plate, corner
Order number **NDA-7080-FP**

NDA-7080-IR940 Replacement cover IR 940nm
Replacement cover IR 940nm
Order number **NDA-7080-IR940**

Software Options

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

https://www.boschsecurity.com