# EXTEGRA IP 9000 FX

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Invented for life

- High-performance explosion-proof imaging platform offers a choice of cameras (highly sensitive starlight 720p50/60 or high dynamic range (HDR) 1080p25/30) and housings (highly ruggedized electropolished 316L stainless steel (for use in highly corrosive environments) or aluminum).
- All models hold international certifications for use in hazardous environments, including ATEX, UL, IECEx, and INMETRO certifications.
- Easy one-piece installation with a motorized zoom lens and autofocus mechanism
- Optional integrated Fiber Optics provides versatility for longer cable runs or where electromagnetic interference is a concern.
- ONVIF conformant; provides interoperability with other conformant systems.

The EXTEGRA IP 9000 FX is a high-performance, smart surveillance HD camera system for explosive environments. The professional-grade imaging platform is capable of delivering 1080p25/30 or 720p50/60 resolution in environments with extreme ambient challenges.
The camera holds all major international explosion-protected certifications for safe use in almost any region of the world. In addition, the camera meets NEMA 4X and IP67 ratings. The camera has undergone vibration and shock testing to IEC standards, as well as Highly Accelerated Life Testing (H.A.L.T.), which pushes the limits of products to ensure reliability throughout the product's lifetime.
The camera gives you the confidence to ensure a safe workplace while getting the picture in the world's most volatile locations.

## System overview

Each EXTEGRA IP 9000 FX camera model is designed using the latest technology in intelligent imaging and video streaming. Each model has either a 1080p25/30 HD or a 720p50/60 HD camera module with a 30x optical zoom, a 12x digital zoom, and an autofocus mechanism that allows remote lens adjustments so that there is no need to open the housing. Both modules offer unmatched image quality at very low network usage.

**High dynamic range models**
Dynamic models have a full 1080p25/30 HD imaging platform with multiple exposures capable of delivering high dynamic range (HDR) video in scenes with simultaneous bright and dark areas. When operated in HDR mode, the camera makes multiple, simultaneous exposures of the same scene to capture details in both bright and dark parts of the scene.

**High sensitivity starlight models**
Starlight models have a 720p50/60 HD imaging platform with starlight technology. The camera produces detailed video images in scenes with limited ambient lighting, without any motion blur associated with cameras that use slow shutters. The camera has been tuned to deliver high-quality HD video in both day and night operation.

**Unrivaled image quality in complete darkness**
Installed in conjunction with an EX65 Explosion Protected Illuminator, the camera provides unrivaled image quality in complete darkness. With 3D diffuser technology that guarantees a crisp, clear, evenly-illuminated image, the infrared illuminator eliminates the need for any conventional high voltage lighting to be installed, which cuts costs significantly. For more information, refer to the EX65 Explosion Protected Illuminator datasheet.

**Extreme environment ready**
The camera is available in either an electropolished 316L stainless steel housing (which offers excellent corrosion protection) or an anodized aluminum housing (for less corrosive environments). The camera holds NEMA 4X and IP67 ratings for wet locations. For operation in areas prone to vibration, the camera has been tested to IEC standards for vibration and shock.

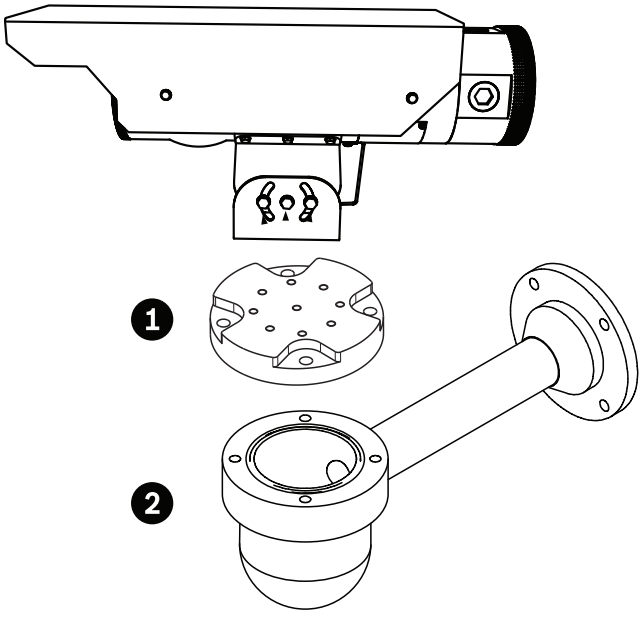
**Global explosion protection certification**
The camera holds all major international certifications for installation of explosion-protected products. As a UL-listed product, the camera is certified for the division and zone system per the NEC standards. For Europe, it holds the ATEX certification. The camera has been tested against and conforms to the international IECEx scheme. For Brazil, the camera holds the INMETRO certification.

**Ease of installation and servicing**
A single pre-assembled unit with an integrated junction box, the camera is designed to be easy to install. Four 3/4-in. conduit openings provide access to the convenient terminal block for all power, alarm, and Ethernet cable connections. (An M20 adapter is also included.) The optional fiber optic module, accessible through the junction box, provides versatility for longer cable runs or where electromagnetic interference is a concern.

**Various mounting options with the mount adapter**
The EXS-ADPT is a stainless steel mount adapter that allows installers to mount an EXTEGRA/EX65 device onto one of a variety of mounting brackets originally designed for the MIC Series of cameras. Installers secure the mounting cradle of the device to the mount adapter, and then secure the adapter to a MIC wall mount bracket (MIC-WMB). The MIC-WMB can be mounted to any of the following MIC Series mounting brackets:

- Spreader plate (MIC-SPR), for installation on a wall
- Corner mount bracket (MIC-CMB), for installation in a corner
- Pole mount bracket (MIC-PMB), for installation on the side of a CCTV pole

Refer to the datasheet “MIC Mounting Brackets and Other Accessories” for details about these mounts.




*EXTEGRA IP 9000/EX65 device to EXS-ADPT (1) to MIC Wall Mount Bracket (MIC-WMB) (2)*

## Functions

**iDNR reduces bandwidth and storage requirements**
The camera uses intelligent Dynamic Noise Reduction (iDNR) which actively analyzes the contents of a scene and reduces noise artifacts accordingly.
The low-noise image and the efficient H.264 compression technology provide clear images while reducing bandwidth and storage by up to 50% compared to other H.264 cameras. This results in reduced-bandwidth streams that still retain a high image quality and smooth motion. The camera provides the most usable image possible by cleverly optimizing the detail-to-bandwidth ratio.

**Content-Based Imaging Technology**
Content-Based Imaging Technology (C-BIT) is used to radically improve image quality in all lighting conditions and to identify areas for enhanced processing. The camera examines the scene using intelligent video analytics and provides feedback to re-tune the image processing. This provides better detail in the areas that matter and better all-round performance.

**Advanced streaming**
The camera offers advanced streaming capabilities so that you can configure the camera to take advantage of the latest network technology.

The camera is designed on the most efficient and powerful H.264 encoding platform capable of delivering high-quality HD video with very low network load. The new intelligent encoding capabilities drops the bandwidth consumption to extremely low levels if the camera detects no motion in the scene.
The camera is capable of quad streaming which allows the camera to be configured to deliver independent, configurable streams for live viewing, recording, or remote monitoring on constrained bandwidths.

**Intelligence**
With built-in Intelligent Video Analysis (IVA), the camera reinforces the concept of Intelligence at the Edge. IVA is Bosch's state-of-the-art intelligent video content analysis technology. With IVA, the camera reliably detects and analyzes moving objects while suppressing unwanted alarms from spurious sources in the image. IVA also allows the camera to detect multiple object behaviors including idle and removed objects, loitering, multiple line crossing, and trajectories. IVA supports BEV (Bird's-Eye-View) People Counter and Assisted Self-Calibration. Configurable detection filters improve reliability and reduce operator work load.

**Advanced networking capabilities**
The camera offers advanced capabilities so you can configure the camera to take advantage of the latest networking technology.
The camera offers Quality of Service (QoS) configuration options to ensure fast network response to PTZ data and images. Quality of Service (QoS) is the set of techniques to manage network resources. QoS manages the delay, delay variation (jitter), bandwidth, and packet loss parameters to guarantee the ability of a network to deliver predictable results. QoS identifies the type of data in a data packet and divides the packets into traffic classes that can be prioritized for forwarding.
The camera also supports the IPv6 internet-layer protocol for packet-switched internetworking across multiple IP networks. IPv6 uses 128-bit addresses (IPv4 uses 32-bit addressing), which allows for many more devices and users on the internet as well as extra flexibility in allocating addresses and efficiency for routing traffic.
Five pre-programmed but configurable user modes, optimized with the best settings for a variety of typical applications, make on-site programming easy and user-friendly. Users select from the menu the mode that best defines the environment in which the camera is installed:
Users have the ability to customize these modes, if necessary, for the specific requirements of the site.

- General – Default mode. Suitable for most applications.
- Low light – Optimized performance for scenes with low light level.
- Motion – Optimized to minimize motion artifacts, such as when monitoring traffic or fast-moving objects.
- Vibrant – Provides enhanced contrast, color reproduction, and sharpness.
- Illuminator – Optimized performance when using the MIC illuminator accessory.

The camera maximizes your security investment by integrating with Bosch video products including the Bosch Video Client, Bosch Video Management System, and the Bosch Recording Station, as well as the full range of Bosch video over IP products.

**ONVIF conformant**
The camera conforms to the ONVIF (Open Network Video Interface Forum) specification which guarantees interoperability between network video products regardless of manufacturer. The ONVIF Profile S specification allows easy integration with the conformant devices and VMS. ONVIF conformant devices are able to exchange live video, audio, metadata, and control information, and ensure that they are automatically discovered and connected to network applications such as video management systems.

## Certifications and approvals

| Region | Certification |
|---|---|
| Europe | CE Declaration of Conformity |
| USA | UL, FCC |
| Canada | cUL |
| Brazil | INMETRO |
| International | ATEX, IECEx |

| Electromagnetic Compatibility (EMC) | |
|---|---|
| Emission | EN55022 class B, FCC part 15 class B |
| Immunity | EN 61000-4, EN 50130-4:1996 |

| Safety | UL 508, CAN/CSA C22.2 No. 60065-03 |
|---|---|

### Explosion Protection

UL/cUL Listed 3RR9
UL/cUL Hazardous Locations Listed as per NEC Division and Zone requirements

- Class I, Div 1, Groups C, and D; Class II, Groups E, F, and G; Class III
- Class I, Zone 1, AEx d IIB T6; Ex d IIB T6 X
- AEx tD 21 T85°C
- DIP DIP A21 Ta85°C X

ATEX / IECEx

- DEMKO 10 ATEX 0948139X
- CE 0344 II 2 GD
- Ex d IIB T6 Gb
- Ex tb IIIC T85°C Db IP67

11/UL-BRHZ-0037
UL 1203, UL 60079-0, UL 60079-1,
ANSI/ISA-61241-0, ANSI/ ISA-61241-1,
CAN/CSA C22.2 No. 30-M1986, CAN/CSA C22.2 No.25-1966,
CAN/CSA C22.2 No. 60079-0-07, CAN/CSA C22.2 No.60079-1-07,
CAN/CSA E61241-1-1-02,
EN 60079-0:2006, EN 60079-1:2007, EN 60079-31:2009,
IEC 60079-0:2009, IEC 60079-1:2007, IEC 60079-31:2008,
INMETRO Portaria 179:2010,
ABNT NBR IEC 60079-0:2008, ABNT NBR IEC 60079-1:2009

### Environmental

UL Type 4X; IP67; Sinusoidal Vibration tested;
Random Vibration tested; Shock tested;
UL50, UL50E,
IEC 60529,
EN60068-2-6, EN60068-2-64, EN60068-2-27,
CAN/CSA C22.2 No. 94.1-07, CAN/CSA C22.2 No. 94.2-07,
CAN/CSA C22.2 No. 60529-05

## Technical specifications

### EXTEGRA IP dynamic 9000 FX camera

| | |
|---|---|
| Imager | 1/2.8-type Exmor CMOS sensor |
| Effective Picture Elements (Pixels) | 1944 x 1224 (2.38 MP) |
| Lens | 30x Zoom<br>4.3 mm to 129 mm |
| Field of View (FOV) | 2.3° to 65° |
| Focus | *Automatic with manual override* |
| Iris | *Automatic with manual override* |
| Digital Zoom | *12x* |

| **Sensitivity / Minimum Illumination** (typical) | **30 IRE** | **50 IRE** |
|---|---|---|
| **Day Mode (Color)** | | |
| Fixed shutter 1/30, High Sensitivity mode On | 0.066 lux | 0.209 lux |
| Fixed shutter 1/30, High Sensitivity mode Off | 0.26 lux | 0.83 lux |
| Fixed shutter ¼, High Sensitivity mode On | --- | 0.026 lux |
| Fixed shutter ¼, High Sensitivity mode Off | --- | 0.104 lux |
| SensUp On, High Sensitivity mode On | 0.0103 lux | 0.033 lux |
| SensUp On, High Sensitivity mode Off | 0.041 lux | 0.104 lux |
| **Night Mode (Black and white)** | | |
| Fixed shutter 1/30, High Sensitivity mode On | 0.033 lux | 0.104 lux |
| Fixed shutter ¼, High Sensitivity mode On | 0.0026 lux | --- |
| SensUp On, High Sensitivity mode On | 0.00129 lux | 0.0041 lux |

### EXTEGRA IP starlight 9000 FX camera

| | |
|---|---|
| Imager | 1/3-type Exmor CMOS sensor |
| Effective Picture Elements (Pixels) | 1305 x 1049 (1.37 MP) |
| Lens | 30x Zoom<br>4.3 mm to 129 mm |
| Field of View (FOV) | 2.1° to 59° |
| Focus | *Automatic with manual override* |
| Iris | *Automatic with manual override* |
| Digital Zoom | *12x* |

| **Sensitivity / Minimum Illumination** (typical) | **30 IRE** | **50 IRE** |
|---|---|---|
| **Day Mode (Color)** | | |
| Fixed shutter 1/30, High Sensitivity mode On | 0.052 lux | 0.166 lux |
| Fixed shutter 1/30, High Sensitivity mode Off | 0.26 lux | 0.66 lux |
| SensUp On (max. ¼), High Sensitivity mode On | 0.0082 lux | 0.033 lux |
| **Night Mode (Black and white)** | | |
| Fixed shutter 1/30, High Sensitivity mode On | 0.0103 lux | 0.041 lux |
| Fixed shutter 1/4, High Sensitivity mode On | 0.00129 lux | --- |
| SensUp On (max. ¼), High Sensitivity mode On | 0.00065 lux | 0.00205 lux |

### Electrical

| | |
|---|---|
| Input Voltage | 21-30 VAC, 50/60 Hz<br>or<br>Single Ethernet High PoE cable connection |
| CCD Type | 1/3-in. Interline, WDR dual shutter |

| | |
|---|---|
| Camera Setup/Control | Via Internet Explorer web browser version 7.0 or later, Bosch Configuration Manager, Bosch Video Management System (BVMS), Bosch Video Client (BVC), or support for third party software |
| Software Update | Network firmware upload |

## Network

| | |
|---|---|
| Standards / Video compression | H.264 (ISO/IEC 14496-10), M-JPEG, JPEG |
| Streaming | Four (4) individually configurable streams in H.264 and M-JPEG, configurable frame rate and bandwidth: |
| Two independently configurable H.264 streams | Stream 1: H.264 Main Profile (MP):<br>• 91xx models: 720p50/60<br>• 92xx models: 1080p25/30<br>Stream 2: H.264 Baseline Profile plus (BP+)<br>or<br>H.264 MP Standard Definition (SD)<br>or<br>Copy of Stream 1 |
| Two additional streams | M-JPEG stream<br>and<br>High Definition (HD) I-frame only stream |

| Resolution (H x V) | |
|---|---|
| 1080p HD | 1920 x 1080 |
| 720p HD | 1280 x 720 |
| 432p SD | 768 x 432 |
| 288p SD | 512 x 288 |
| 144p SD | 256 x 144 |

| | |
|---|---|
| Ethernet | 10BASE-T/100BASE-TX, auto-sensing, half/full duplex |
| Encryption | TLS 1.0, SSL, DES, 3DES, AES |
| Ethernet connector | RJ45 |
| Connectivity | ONVIF Profile S, Auto-MDIX |
| GOP Structure | IP, IBP, IBBP |
| Data Rate | 9.6 kbps to 6 Mbps |
| Overall IP Delay | 240 ms |
| Protocols | IPv4, IPv6, UDP, TCP, HTTP, HTTPS, RTP/RTCP, IGMP V2/V3, ICMP, ICMPv6, RTSP, FTP, Telnet, ARP, DHCP, SNTP, SNMP (v1, MIB-II), 802.1x, DNS, DNSv6, DDNS (DynDNS.org, selftHOST.de, no-ip.com), SMTP, iSCSI, UPnP (SSDP), DiffServ (QoS), LLDP, SOAP, Dropbox, CHAP, digest authentication |

## Local Storage

| | |
|---|---|
| Memory Card Slot | User-supplied SD/SDHC/SDXC memory card (maximum 2TB – SDXC) |
| Recording | Continuous recording of video and audio, alarm/events/schedule recording |

## Fiber Optic Kit

| VG4-SFPSCKT | |
|---|---|
| Description | Fiber Optic Ethernet Media Converter kit [6]. Requires a small form-factor pluggable (SFP) module (sold separately). |
| Data Interface | Ethernet |
| Data Rate | 10/100 Mbps<br>IEEE 802.3 Compliant<br>Full Duplex or Half Duplex Electrical Port<br>Full Duplex Optical Port |
| Compatible Receiver | CNFE2MC |
| Installation | Installed inside a VG4-A-PA0, VG4-A-PA1, VG4-A-PA2, VG4-A-PSU1, or a VG4-A-PSU2 power supply box with supplied mounting hardware |

6. Kit available separately and must be installed inside the AUTODOME power supply box.

| SFP Modules | |
|---|---|
| Description | Interchangeable modules available for use with MMF or SMF optical fiber. |
| Data Interface | Ethernet |
| Data Rate | 10/100 Mbps<br>IEEE 802.3 Compliant |

| Mechanical | |
|---|---|
| Dimensions (LxWxH) | |
| • SFP-2 and SFP-3 | 55.5 x 13.5 x 8.5 mm (2.2 x 0.5 x 0.3 in.) |
| • SFP-25, SFP-26 | 63.8 x 13.5 x 8.5 mm (2.5 x 0.5 x 0.3 in.) |
| Weight (all SFP modules) | 0.23 kg (.05 lb) |

| | Type | Connector | Wavelength (transmit / receive) | Max. Distance |
|---|---|---|---|---|
| SFP-2 | MMF | Duplex LC | 1310 nm / 1310 nm | 2 km (1.2 miles) |
| SFP-3 | SMF | Duplex LC | 1310 nm / 1310 nm | 20 km (12.4 miles) |
| SFP-25 | MMF | Single SC | 1310 nm / 1550 nm | 2 km (1.2 miles) |
| SFP-26 | MMF | Single SC | 1550 nm / 1310 nm | 2 km (1.2 miles) |

**Fiber Compatibility**

| | |
|---|---|
| Optical Fiber Compatibility, MMF | 50/125 µm MMF. For 50/125 µm fiber, subtract 4 dB from the specified optical budget value. Must meet or exceed fiber standard ITU-T G.651. |
| Optical Fiber Compatibility, SMF | 8–10/125 µm SMF. Must meet or exceed fiber standard ITU-T G.652. |
| Optical Distance Specifications | Specified transmission distances are limited to the optical loss of the fiber and any additional loss introduced by connectors, splices, and patch panels. The modules are designed to operate over the entire optical loss budget range, so they do not require a minimum loss in order to operate. |

### Miscellaneous

| | |
|---|---|
| Preset Zoom Positions | 256 |
| Camera Setup / Control | 100 Base Tx Ethernet |
| Supported Languages | English, Czech, Dutch, French, German, Italian, Polish, Portuguese, Russian, Spanish |

### User Connections

| | |
|---|---|
| Power, Network | RJ-45 100 Base-TX Ethernet PoE++ 60 W |
| Power, Camera | 24 VAC (power supply) |
| Video and Control | RJ-45 100 Base-TX Ethernet |
| Alarm Inputs | Three (3) |
| Alarm Outputs | Two (2) |
| Audio | 1 x mono line in, 1 x mono line out |
| • Signal line in | 12 kOhm typical, 1 Vrms max |
| • Signal line out | 1 Vrms at 1.5 kOhm, typical |

### Environmental

| | |
|---|---|
| Operating Temperature | -50 °C to +60 °C (-58 °F to +140 °F) |
| Storage Temperature | -55 °C to +70 °C (-67 °F to +158 °F) |
| Operating Humidity | 0 to 100% relative (condensing, after installed and sealed) |
| Storage Humidity | 20 to 98% relative (non-condensing) |

### Construction

| | |
|---|---|
| Dimensions (L x W x H) | 381 x 114 x 114 mm (11.01 x 4.5 x 4.5 in.) without sunhood or mounting cradle |
| Weight | Stainless Steel: 12.9 kg (28.5 lb) Aluminum: 6.4 kg (14 lb) |
| Construction Material | Electropolished 316L Stainless Steel or Anodized Aluminum |
| Bracket | Pan(±36°)/Tilt(±45°), mounting cradle included |
| Cable Entry | Four (4) 3/4-in. NPT entries; conduit seal included with NTSC models; M20 adapter included with PAL models |
| View Window | 9-mm thick borosilicate float glass |

## Ordering information

**NXF-9130-A4 EXTEGRA IP starlight 9000 FX**
Explosion-protected, 720p60 HD fixed camera, high sensitivity, integrated zoom lens, aluminum housing
Order number **NXF-9130-A4**

**NXF-9130-S4 EXTEGRA IP starlight 9000 FX**
Explosion-protected, 720p60 HD fixed camera, high sensitivity, integrated zoom lens, stainless steel housing
Order number **NXF-9130-S4**

**NXF-9230-A4 EXTEGRA IP dynamic 9000 FX**
Explosion-protected, 1080p30 HD fixed camera, high dynamic range (HDR), integrated zoom lens, aluminum housing
Order number **NXF-9230-A4**

**NXF-9230-S4 EXTEGRA IP dynamic 9000 FX**
Explosion-protected, 1080p30 HD fixed camera, high sensitivity, integrated zoom lens, stainless steel housing
Order number **NXF-9230-S4**

### Accessories

**VG4-SFPSCKT Fiber Optic Ethernet Media Converter Kit**
Ethernet media converter video transmitter/data receiver fiber optic kit for AUTODOME cameras and for MIC-IP-PSU for MIC analog cameras.
Order number **VG4-SFPSCKT**

**SFP-2 Small Form-factor Pluggable Optical Interface**
SFP Fiber Optic Module, Multi-mode, 1310 nm, 2 km (1.2 miles), 2 LC connectors
Order number **SFP-2**

**SFP-3 Small Form-factor Pluggable Optical Interface**
SFP Fiber Optic Module, Single-mode, 1310 nm, 20 km (12.4 miles), 2 LC connectors
Order number **SFP-3**

**SFP-25 Small Form-factor Pluggable Optical Interface**
SFP Fiber Optic Module, Multi-mode, 1310/1550 nm, 2 km (1.2 miles), 1 SC connector
Order number **SFP-25**

**SFP-26 Small Form-factor Pluggable Optical Interface**
SFP Fiber Optic Module, Multi-mode, 1550/1310 nm, 2 km (1.2 miles), 1 SC connector
Order number **SFP-26**

**EXS-ADPT EX65-to-MIC Mount Adapter, Stainless Steel**
Adapter that allows the EX65 camera or illuminator to be mounted on a MIC wall mount bracket (MIC-WMB) and then to one of a variety of other MIC Series mounting brackets.
Order number **EXS-ADPT**

**MIC-CMB-S Corner Mount Bracket, Stainless Steel**
Corner mount bracket, grade 316 stainless steel
Order number **MIC-CMB-S**

**MIC-WMB-S Wall Mount Bracket, Stainless Steel**
Wall mount bracket, grade 316 stainless steel (Requires MIC-SPR or MIC-PMB for secure mounting because of weight.)
Order number **MIC-WMB-S**

**MIC-PMB Pole Mount Bracket**
Pole mount bracket (includes 2 x 455 mm stainless steel banding straps for pole diameters 75 to 145 mm)
Order number **MIC-PMB**

**MIC-SPR-S Spreader Plate, Stainless Steel**
316L stainless steel spreader plate suitable for brickwork surface mounting, plain finish
Order number **MIC-SPR-S**

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