

MIC IP ultra 7100i

www.boschsecurity.com



BOSCH

Invented for life



- ▶ UHD “4K” resolution (3840 x 2160 pixels) @ 30fps, 12x zoom with Optical Image Stabilization (OIS)
- ▶ Exceptional strength and ruggedness for any outdoor application including traffic monitoring (bridges, tunnels, or highways), perimeter protection, city surveillance, and mining
- ▶ Built-in Camera Trainer to train the camera to recognize user-specified target objects, such as moving and non-moving objects, to alert operators of unusual scene activity
- ▶ Edge intelligence with Intelligent Tracking and object detection even when the camera is moving
- ▶ Optional, variable beam illuminator with multi spectrum LEDs ensures that IR light (up to 450 m (1476 ft)) is uniformly distributed in the field to avoid dark spots or an over-illuminated scene

The first ruggedized PTZ camera with UHD (“4K”) resolution, MIC IP ultra 7100i offers unmatched imaging and reliability in extreme environments. The camera’s ruggedized design meets customer expectations in demanding environments that exceed the capabilities of conventional IP cameras. Even in installations subject to harsh shock/vibration conditions and/or extreme weather, the camera provides high-quality video images.

The camera is the ideal choice for:

- Transportation: highways, bridges/tunnels, and ports
- Critical infrastructure: power generation/transmission, refineries/pipelines, and mining
- High-security: government facilities and data centers
- Mission-critical applications involving harsh environments that require high-resolution imaging
- Complex scenes with many details under any lighting condition
- Installations where downtime is undesired because of high service costs

Functions

Ruggedized design for extreme applications

The camera is designed to last in surveillance applications that are beyond the mechanical capabilities of conventional positioning systems. The entire metal body is anodized and has been engineered to withstand high-impact, low-frequency vibration. The camera models comply to IK10 rating for impact resistance and to the IEC 60068 standards applicable to vibration and shock.

The camera has a closed-loop positioning system. The system allows the camera to maintain its position under continuous vibration or after an extreme shock event, even without homing or pre-position calibration. The camera benefits from Bosch domain knowledge in material engineering and coatings. As a result, the superior metallurgy and the finish of the camera provide unprecedented protection against corrosion.

The camera has been tested for 2000 hours for salt spray per ISO 12944-6: C5-M (High); Aluminum Housing Components.

Defroster on the viewing window

The window defroster helps to decrease or to prevent a build-up of ice on the camera window. Even in very cold environments, where other cameras suffer from frosted windows, the MIC camera lets you see more and see better.

Robust design rated to an industry-leading IP68, Type 6P, IK10

Subjected and certified to rigorous dust and immersion tests (IP68, Type 6P) and impact test (IK10), MIC cameras are perfectly suited for installation in even the most unforgiving environments. Anodized aluminum housing and robust, powder coat paint give unequalled corrosion protection to each MIC camera. Reliable O-ring seals completely protect the internal components from the external environment, meaning that there is no need to pressurize the camera. To guarantee unit integrity, the factory tests each MIC camera for leaks before shipping.

Pan and tilt drive mechanism

The pan and tilt mechanism is a ruggedized, direct-drive system. The brushless motors directly control the pan and tilt movement using a finely-tuned gear train designed to minimize backlash and support continuous operation without significant wear and tear.

With a full 360° continuous rotation pan and 290° tilt control (on upright models without illuminators) and super-quick pan (120°/second) and tilt (90°/second) for exceptional viewing capability, the camera outperforms other cameras in its class.

Snap to zoom

Drawing a box in the image will trigger the camera to zoom to the correct position.

Dual-mode Illumination

The field-installable MIC illuminator accessory (sold separately) consists of IR LEDs and White light LEDs. IR LEDs enable Detection of objects 450 m (1476 ft) away.

Note: The cameras in this product family are compatible with MIC-ILx-400 models only. The following table identifies the application for each type of LED.

Application	Type of illuminator
Close-range illumination	940 nm IR LEDs
Long-range detection	850 nm IR LEDs
Identification and deterrent	White light LEDs

The MIC camera can steer the IR beam dynamically to match the illumination intensity with the camera's field of view according to the zoom level.

Beam intensity is controlled automatically or manually, depending on user preference. Decreasing intensity reduces overexposure.

The patented, integrated Constant Light technology delivers a consistent level of illumination performance throughout the life of the product, even in fluctuating temperatures.

White light mode allows operators to capture full scene details in color or use the light as a deterrent effect.

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 new compression standard of choice for IP video surveillance systems.

Intelligent streaming

Smart encoding capabilities, together with Intelligent Dynamic Noise Reduction technology and analytics, reduce the bandwidth consumption to extremely low levels. Only relevant information in the scene, like motion, or objects found with the analytics, need to be encoded.

The camera is capable of quad streaming which allows the camera to deliver independent, configurable streams for live viewing, recording, or remote monitoring via constrained bandwidths.

Recording and storage management

Control recording management with the Bosch Video Recording Manager application, or use the local storage and iSCSI targets in the camera directly without any recording software.

Use a memory card of a maximum of 2 TB for recording "at the edge" or for Automatic Network Replenishment (ANR) technology to improve the reliability of the recording.

Pre-alarm recording in RAM reduces bandwidth consumption on the network and extends the effective life of the memory card.

Intelligent Video Analytics on the edge

The camera includes the latest release of Intelligent Video Analytics application for use on pre-positions.

Designed for mission-critical applications, the video analytics can reliably detect, track, and analyze moving objects while suppressing unwanted alarms from spurious sources in the image, even in harsh weather conditions.

Advanced tasks like multiple line crossing, loitering, idle / removed object detection, crowd density estimation, occupancy and people counting are available for live alarming and forensic search. Object filters based on size, speed, direction, aspect ratio, and color can be defined.

A simplified calibration mode reduces installation time significantly, because you only need to enter the installation height once for each camera, independent of pre-positions.

After the camera is calibrated, the analytics engine can automatically classify objects as upright person, car, bike, or truck.

Support for specific use cases

The video analytics software offers easy setup by providing optimal default values for several applications. Calibrate the camera, then simply select the desired use case and adapt the offered alarm fields and lines to your field of view. This is available for the following scenarios:

- Intrusion detection: small area, single alarm field
- Intrusion detection: long distance, two alarm fields have to trigger
- People counting
- Traffic monitoring: wrong way detection
- Traffic monitoring: automatic incident detection with wrong way detection, pedestrian detection, slow vehicles, stopped vehicles and dropped objects

Video analytics while camera is moving

Outside of pre-positions and even while the PTZ camera is moving, whether on guard tours or manually, the Intelligent Video Analytics application can detect and start alarms when objects are in alarm fields.

These alarm fields are defined once across all PTZ camera views. The camera can automatically trigger an alarm if any part of a field within the camera's view becomes active while on a guard tour sweeping across the monitored areas.

Camera Trainer

Based on examples of target objects and non-target objects, the new 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.

Intelligent Tracking

When the Intelligent Video Analytics application in the camera detects objects or individuals, the camera can automatically activate the Intelligent Tracking feature, which controls the pan/tilt/zoom actions of the camera to track objects and keep them in view. The newest generation of the Intelligent Tracking feature ensures smoother camera motion for more comfortable viewing and more reliable tracking of objects even under challenging scenes.

Areas with potentially interfering background motion (moving trees, pulsating lights, and busy roads) can be masked out.

The camera supports 2 Intelligent Tracking modes:

- **Auto mode:** In this mode, the camera follows any object that has triggered an alarm in the Intelligent Video Analytics application. This mode is most useful for scenarios where the alarm cases can be clearly defined, for example, when no motion is expected at all.
- **Click mode:** In this mode, users can click on any object detected by the Intelligent Video Analytics application to enable the camera to track the movement of the selected object. This mode is most useful for scenarios where normal scene activity is expected.

Image Stabilization

The camera incorporates a built-in, optical Image stabilization feature which prevents pixel loss and outperforms electronic Image stabilization.

If it detects vibration, the camera dynamically corrects the shaky video in both the vertical and horizontal axis, resulting in exceptional image clarity and a stable field of view on the monitor.

Simple set-up

The camera has a very intuitive user interface that allows fast and easy configuration. Configurable scene modes are provided with the best settings for a variety of applications.

- **Standard**

This mode is optimized for most standard scenes both indoor and outdoor.

- **Color Only (Traffic)**

In this mode, the camera does not switch to monochrome mode at low light levels. The mode is optimized to minimize motion artifacts and to capture the color of vehicles/pedestrians and traffic lights, even at night, for scenarios such as city surveillance and traffic monitoring.

- **Indoor**

This mode is ideal for indoor applications where lighting is constant and does not change. Auto white balance will be mainly focused on low color temperature 3200K.

- **Sensitivity boost**

This mode provides maximum sensitivity in low light scenes by using longer exposure times, resulting in bright images even in extreme low light.

- **Fast movement**

This mode is used for monitoring fast moving objects like cars in traffic scenes. Motion artifacts are minimized and the image is optimized for a sharp and detailed picture in color and monochrome.

- **Vibrant**

- **Illuminator**

This mode gives optimized performance when using the MIC illuminator accessory.

AE region and Focus region

The Auto AE function computes the lighting condition for the entire screen and determines the optimum level of iris, gain, and shutter speed. In AE region mode, users can designate a particular section of the subject, based on pre-positions. The camera weighs that portion of the image and then computes a value to optimize iris, gain, and shutter speed to obtain an image.

The focus region mode allows the customer to focus on a specific portion of the subject. This mode is used when it is difficult to focus on the subject by using the normal auto focus, and so on.

Data security

Special measures are necessary to ensure the highest level of security for device access and data transport. On initial setup, the camera is only accessible over secure channels. You must set a service-level password in order to access camera functions. Web browser and viewing client access can be protected using HTTPS or other secure protocols that support state-of-the-art TLS 1.2 protocol 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 protocol. Superior protection from malicious attacks is guaranteed by the Embedded Login Firewall, on-board 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

Software sealing

After camera configuration is set and should not be changed, system administrators can enable software protection that seals the camera configuration. Any change of the sealing status and any change to static configuration, accidentally or intentional, will break the seal. The camera then sends an alarm message that the video management system can use to start an appropriate alarm scenario. The camera creates a separate log file of all changes that have an effect on the sealing status.

System integration and ONVIF conformance

The camera conforms to the specifications for ONVIF Profile S and ONVIF Profile G. (ONVIF is the acronym for Open Network Video Interface Forum.) For H.265 configuration, the camera also 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. For more information, see the Bosch Integration Partner Program (IPP) website (ipp.boschsecurity.com).

Ease of installation

The camera supports mounting in upright, inverted, or canted orientation. The on-site canting functionality lets installers tilt down the upper section of the camera at a 35° angle. At this angle, operators can see the scene directly below the camera.

The camera has been designed for quick and easy installation, a key feature from Bosch IP video security products.

Power options

The camera can be powered by a network compliant to High Power-over-Ethernet using a Bosch model of High PoE Midspan (sold separately). With this configuration, only a single cable connection (Cat5e/Cat6 Shielded Twisted Pair (STP)) is needed to view, to power, and to control the camera.

For maximum reliability, the camera can operate with a redundant power system of a High PoE Midspan and a separate 24 VAC power source connected simultaneously. If either the High PoE or 24 VAC power source fails, the camera seamlessly transitions to the remaining power source.

The 60 W midspan can supply power to models without an illuminator accessory. The 95 W midspans can supply power to all models of MIC IP ultra 7100i, including models with the illuminator accessory. The camera can also accept a standard 24 VAC power source if a High PoE network interface will not be used. User-supplied wiring must be in compliance with electrical codes (Class 2 power levels).

Camera Diagnostics

The camera has several built-in sensors / advanced diagnostics that display warnings on the camera's OSD about the health of the camera. The diagnostics log records the events such as:

- Low voltage - a drop in incoming power below the level where the camera becomes non-functional
- High temperature - the internal temperature exceeds specifications
- Low temperature - the internal temperature exceeds minimum levels
- High humidity - the internal humidity exceeds 70%
- High vibration - the acceptable level of acceleration forces was exceeded
- Total hours of camera operation
- Illuminator aging history

Certain events also appear on the camera's OSD. These diagnostic records are available for the installation or service technician to review.

As with all Bosch products, the camera is designed using the industry's best design process and is subjected to the most stringent testing standards such

as HALT (highly accelerated life testing), which pushes the limits of products to ensure reliability throughout their lifetime.

Project Assistant by Bosch is the market's most easy-to-use app for initial installation and basic configuration of IP cameras. Off-site and without connection to the camera, basic configurations can already be covered and shared with colleagues. On-site, these pre-configurations can simply be pushed onto the camera, making the installation procedure easier and less time consuming. Already configured cameras can be integrated as well. The app allows easy viewing and adjustment of the camera's field of view. The app automatically generates a comprehensive report of the commissioned cameras.

Certifications and approvals

For a full list of all related certifications/standards, refer to the Product Tests Report, available on the online catalog, on the Documents tab of the product page for your device. If the document is unavailable on the product page, contact your sales representative.

Electromagnetic Compatibility (EMC)	Complies with FCC 47 CFR Part 15, ICES-003, and CE regulations, including latest versions of: EN 50130-4 EN 50121-4 (Railway applications) EN 55032 CISPR 32
Product Safety	Complies with UL, CE, CSA, EN, and IEC Standards including: UL 62368-1 UL 60950-1, Ed. 2 CAN/CSA-C22.2 No. E60950-1B-07 EN 62368-1 EN 60950-1 CAN/CSA-C22.2 No. 62368-1-14 IEC 62368-1 Ed. 2 IEC 60950-1 Ed. 2 IEC 60950-22 Ed. 2
Marks	UL, CE, WEEE, RCM, EAC, VCCI, FCC, RoHS

Installation/configuration notes

In the table below, an "X" identifies the power source options for MIC IP camera models.

Camera models	60 W midspan	95 W midspan	24 VAC PSU
Models with illuminator		X	X
Models without illuminator	X	X	X

Technical specifications

Imager	1 in. Exmor R CMOS Sensor
Effective Picture Elements (Pixels)	5544 x 3694 (20.47 MP)
Lens	12x motorized Zoom 9.3 mm to 111.6 mm F2.8 to F4.5
Field of View (FOV) (with optic image stabilizer ON)	6.1° to 64.6° (6.1° to 64.5°)
Focus	Automatic with manual override
Iris	Automatic with manual override
Digital zoom	12X Note: Super resolution zoom is always on when digital zoom is <1.5X. This feature is not available at higher zoom values.

Video performance - Sensitivity

(3100K, reflectivity 89%, 1/30, F1.6, 30 IRE)

Color	0.0077 lx
Monochrome	0.0008 lx

Additional Camera Settings

Gain control	AGC, Fixed
Aperture Correction	Horizontal and vertical
Electronic Shutter Speed (AES)	1/1 sec to 1/10000 sec (22 steps)
Signal-to-Noise Ratio (SNR)	>55 dB
Day/Night switch	Automatic IR cut filter
Backlight compensation (BLC)	On / Off / Intelligent Auto Exposure (IAE)
White balance	2000 K to 10,000 K ATW, AWB Hold, Extended ATW, Manual, Sodium Lamp Auto, Sodium Lamp
Day/Night	Monochrome, Color, Auto
Defog mode feature	Improves visibility when viewing foggy or other low-contrast scenes.
Noise Reduction	Intelligent Dynamic Noise Reduction

Video performance - Dynamic range

High dynamic range	TBD dB
Measured according to IEC 62676 Part 5	TBD dB

DORI	DORI definition	Distance	To	Object
		WIDE 1X	TELE 12X	Scene width
Detection	25 pixels/m (8 pixels/ft)	108 m (355 ft)	154 m (504 ft)	154 m (504 ft)
Observation	63 pixels/m (19 pixels/ft)	43 m (142 ft)	61 m (202 ft)	61 m (202 ft)
Recognition	125 pixels/m (38 pixels/ft)	22 m (71 ft)	31 m (101 ft)	31 m (101 ft)
Identification	250 pixels/m (76 pixels/ft)	11 m (36 ft)	15 m (50 ft)	15 m (50 ft)

Video content analysis

Analysis type	Intelligent Video Analytics
Configurations	Off / Global VCA / Profiles 1 - 16
Calibration	Automatic self-calibrating when height is set
Alarm rules (combinable)	Any object Object in field Crossing line Entering field Leaving field Loitering Following route Idle object Removed object Counter Occupancy Crowd detection Condition change Similarity search Tampering
Object filters	Duration Size Aspect ratio v/h Speed Direction Object classes (Upright persons, Bikes, Cars, Trucks) Color

Network

Standard/Video compression	H.265, H.264 (ISO/IEC 14496), M-JPEG, JPEG
Streaming	Four (4) streams: Two (2) configurable streams in H.264 or H.265 One (1) I-frames-only stream based on first stream One (1) M-JPEG Stream

Resolutions (H x V)

4K UHD	3840 x 2160
1080p HD	1920 x 1080
720p HD	1280 x 720
1.3 MP 5:4 (cropped)	1280x 1024
D1 4:3 (cropped)	704 x 480
640x 480	640 x 480
432p SD	768 x 432
288p SD	512 x 288
144p SD	256 x 144

Protocols	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, V3, MIB-II), 802.1x, DNS, DNSv6, DDNS (DynDNS.org, selfHOST.de, no-ip.com), SMTP, iSCSI, UPnP (SSDP), DiffServ (QoS), LLDP, SOAP, Dropbox™, CHAP, digest authentication
-----------	---

Note: Dropbox is a trademark of Dropbox, Inc.

Ethernet	10BASE-T/100BASE-TX, auto-sensing, half/full duplex
Encryption	TLS 1.2, SSL, DES, 3DES, AES
Ethernet connector	RJ45
GOP Structure	IP, IBP, IBBP
Overall IP Delay	60 fps: 166ms (typical) 30 fps: 233 ms (typical)
Interoperability	ONVIF Profile S ONVIF Profile G ONVIF Profile T GB/T 28181 Auto-MDIX

Miscellaneous

Sectors	4, 6, 8, 9, 12, or 16 user-selectable, independent Sectors, each with 20 characters per Title
Privacy Masks	32, individually configurable; maximum 8 per Pre-position; programmable with 3, 4 or 5 corners; selectable color of Black, White, or gray, as well as an "Auto" option in which the camera selects the most prevalent of the three colors (Black, White, or gray) in the background scene as the pattern color.

Virtual Masks	24 individually configurable Virtual Masks to hide parts of the scene (background motion such as moving trees, pulsating lights, busy roads, etc.) which should not be considered for flow analysis to trigger Intelligent Tracking.
Pre-positions	256, each with 20 characters per Title
Guard Tours	Custom Recorded Tours - two (2), total duration 30 minutes: Pre-position tour - one (1), consisting of up to 256 scenes consecutively, and one (1) customized with up to 256 user-defined scenes
Supported Languages	English, Czech, Dutch, French, German, Italian, Polish, Portuguese, Russian, Spanish, Japanese, Chinese
Alarm control	Rules-based logic supports basic and complex pre-defined user-specified commands In its most basic form, a "rule" could define which input(s) should activate which output(s).
Washer Pump Interface	Control functions integrated. Alarm/Washer Interface Unit (MIC-ALM-WAS-24 sold separately) provides electrical interface to a washer pump device (user-supplied).
Camera status monitoring	Integrated sensors monitor operational status such as internal temperature, humidity level, incoming voltage level, vibration, and shock events.
Diagnostics	Various status conditions are tracked in the internal diagnostic log. Critical fault conditions will also be displayed on screen.

Mechanical

Drive Unit	Brushless, integral pan/tilt motor drive
Supported mounting orientation	Upright Inverted Canted
Pan Range	360° continuous rotation
Tilt Angle	Without illuminators (Upright): 290° Without illuminators (Inverted): 250° With illuminators: 186.6°
Tilt Range	Upright/Inverted: -55° - +90° Canted: -90° - +90°
Variable Pan Speed	0.2°/second - 120°/second
Variable Tilt Speed	0.2°/second - 90°/second
Intelligent Tracking Speed	>0.2°/second (minimum)
Pre-position Speed	120°/second
Pre-position Accuracy	+/-0.17°

Proportional Pan / Tilt to Zoom	Yes
Audible Noise	<65 dB

Electrical

Input voltage	21-30 VAC, 50/60 Hz High Power over Ethernet 56VDC nominal
Power Consumption (typical)	Without illuminator: 40 W With illuminator: 70 W
Current consumption	~3.15A (24 VAC) ~1.5A (High PoE)
Redundant configuration	Connect both a High PoE Midspan and a separate 24 VAC power source. If either power source fails, the camera automatically switches to the other power source.
Surge protection	Built-in surge protection for power, data, and network interfaces (Refer to the A&E Specifications for details.)

User Connections

Accessory Interface/ Control Data	RS-485, Simplex, half and full duplex, user-selectable baud rate or auto-baud Used to communicate with optional Alarm/washer interface box (MIC-ALM-WAS-24) or with Bosch OSRD, Pelco P/D, Forward Vision, and Cohu serial protocols.
Chassis ground	Ground wire with connector lug
Input voltage	Without illuminator: RJ45 connector to High PoE Midspan - 60 W (NPD-6001B) or 95 W (NPD-9501A or NPD-9501-E) With illuminator: 95 W High PoE Midspan (NPD-9501A or NPD-9501-E)* or 21-30 VAC, 50/60 Hz; Female-to-female RJ45 couple included
Power, Camera	24 VAC (power supply)
Video and Control	RJ45 100BASE-TX Ethernet RS-485 half-duplex 57600 baud (dedicated for MIC-ALM-WAS-24)

* Must purchase NPD-9501A or NPD-9501-E in order to use the High PoE solution.

Audio

Compression	G.711, AAC, and L16 (live and recording)
Signal-to-Noise Ratio (SNR)	Audio-in: 47 dBA (A-weighting) Audio out: 50 dBA (A-weighting)
Mode	Two-way, full duplex audio communication
User connections	Line in: 15k ohm typical, 1.0Vrms, max Line out: 0.8Vrms at 12K ohm, typical

Communications / Software Control

Serial protocols	Bosch OSD, Pelco P/D, Forward Vision, and Cohu (Note: For Pelco, Forward Vision, and Cohu protocols, a separate license (MVS-FCOM-PRCL) is required.)
------------------	--

Local Storage

Memory card slot	User-supplied full SD card (maximum 2 TB) Recommended: Sony Industrial SD cards
------------------	--

Environmental

The customer is responsible for making sure that the installation complies with the specified stresses that follow.

Note: Unit includes internal heater and fan.

Ingress Protection Rating/Standard	IEC 60529 IP66 / IP68 / Type 6P (dust and immersion) when installed on a MIC-DCA or on a MIC wall mount IP67 (moisture and dust) with the IP67 Connector Kit (MIC-9K-IP67-5PK) on the connectors in the camera base. This kit is also required when using non-Bosch mounts.
External Mechanical Impact (IK Code / Impact rating)	IEC 62262 IK10 (excluding glass window)
Operating temperature	-40 °C to +65 °C (-40 °F to +149 °F)
NEMA TS 2-2003 (R2008), para 2.1.5.1 using fig. 2.1 test profile	-34 °C to +74 °C (-30 °F to +165 °F) for 15 hours
Cold Start-up Temperature	-40 °C (-40 °F) (Requires 60-minute warm-up prior to PTZ operations.)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Humidity	0-100%
Wind Load	161 km/h (100 mph) (sustained; camera will hold its position) (Camera can endure gusts up to 241 km/h (150 mph) but may not hold its position.) MIC camera with illuminator Coefficient of Drag: TBD Effective Projected Area (EPA): TBD m ² (TBD ft ²)

Vibration	IEC 60068-2-6: 10-150 Hz, 1.0G(10m/s ²), 20 Sweeps NEMA TS-2 Section 2.2.8: 5-30 Hz, 0.5G MIL-STD-167-1A
Shock	IEC 60068-2-27: 40G, 6 ms, non-repetitive shocks (three shocks each direction, per axis) (half sine) NEMA TS-2 Section 2.2.9: 10G, 11 ms (half sine)

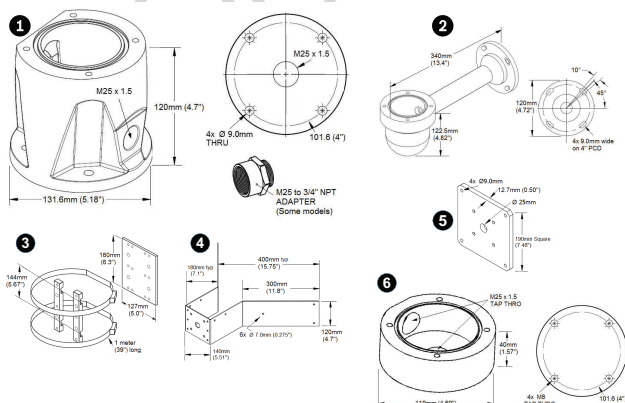
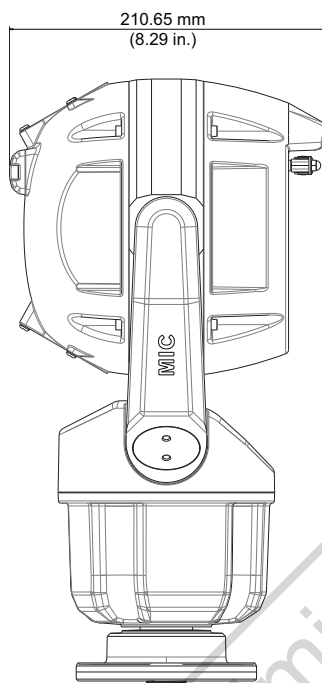
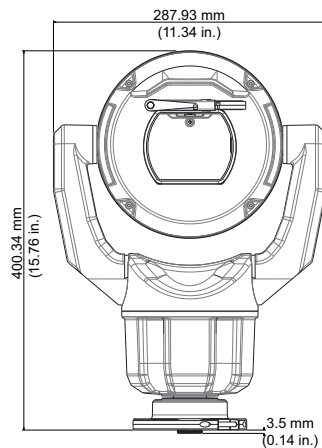
MIL-STD-810 Military Standard Test Methods	MIL-STD-810-G, 501.5 High Temperature MIL-STD-810-G, 502.5 Low Temperature MIL-STD-810-G, 503.5 Temperature Shock MIL-STD-810-G, 505.5 Solar Radiation MIL-STD-810-G, 506.5 Rain MIL-STD-810-G, 509.5 Salt Fog MIL-STD-810-G, 510.5 Sand and Dust
--	---

Salt Mist Spray (Corrosion Test)	ISO 12944-6: C5-M (High); Aluminum Housing Components
----------------------------------	---

Construction

Dimensions (W x H x D)	287.93 mm x 400.34 mm x 210.65 mm (11.34 in. x 15.76 in. x 8.29 in.)
Weight	8.7 Kg (19.2 lb)
Window	Flat glass with defroster
Construction Material	Anodized cast solid aluminum
Window Wiper	Integrated, long-life silicone wiper
Sunshield (to prevent sun load in hot climates)	Optional; sold separately
Canting	On-site canting functionality
Standard Colors	Black (RAL 9005), White (RAL 9010), or Grey (RAL 7001)
Standard Finish	Corrosion-resistant, powder coat paint, sand finish

Dimensional Drawings



- | | |
|------------------------|-----------------------------|
| 1 Deep conduit adapter | 4 Corner mount bracket |
| 2 Wall mount bracket | 5 Wall mount spreader plate |
| 3 Pole mount bracket | 6 Shallow conduit adapter |

For more options, refer to the MIC IP cameras Accessory Quick Selection Guide (https://media.boschsecurity.com/fs/media/pb/media/support_1/tools/mic_ip_cameras_accessory_quick_selection_guide.pdf).

Ordering information

MIC-7504-Z12BR PTZ 8MP 12x IP68 enhanced black
Ruggedized PTZ camera; 4K UHD, 12x, optical image stabilization, defroster, SD card slot.
Black (RAL 9005). Sand finish.
Order number **MIC-7504-Z12BR**

MIC-7504-Z12WR PTZ 8MP 12x IP68 enhanced white
Ruggedized PTZ camera; 4K UHD, 12x, optical image stabilization, defroster, SD card slot.
White (RAL 9010). Sand finish.
Order number **MIC-7504-Z12WR**

MIC-7504-Z12GR PTZ 8MP 12x IP68 enhanced gray
Ruggedized PTZ camera; 4K UHD, 12x, optical image stabilization, defroster, SD card slot.
Grey (RAL 7001) color. Available in specific regions only.
Order number **MIC-7504-Z12GR**

MIC 7000i series Optional Mounts

Accessories

MIC-ILB-400 Illuminator, white-IR light 450m, black
Illuminator accessory, IR (850 nm/940 nm) + White light LEDs, for certain MIC IP cameras.
Black (RAL 9005). Sand finish.
Order number **MIC-ILB-400**

MIC-ILW-400 Illuminator, white-IR light 450m, white
Illuminator accessory, IR (850 nm/940 nm) + White light LEDs, for certain MIC IP cameras.
White (RAL 9010). Sand finish.
Order number **MIC-ILW-400**

MIC-ILG-400 Illuminator, white-IR light 450m, gray
Illuminator accessory, IR (850 nm/940 nm) + White light LEDs, for certain MIC IP cameras.
Grey (RAL 7001) color. Available in specific regions only.
Order number **MIC-ILG-400**

NPD-6001B High PoE midspan
60 W indoor midspan for AUTODOME 7000 and MIC IP cameras without illuminators
Order number **NPD-6001B**

NPD-9501A Midspan, high PoE, single port, AC in
95 W indoor midspan for AUTODOME 7000 and MIC IP cameras with or without illuminators
Order number **NPD-9501A**

NPD-9501-E Midspan 95W 1 port outdoor
95 W outdoor midspan for AUTODOME 7000 and MIC IP cameras with or without illuminators
Order number **NPD-9501-E**

VG4-A-PSU1 PSU, 120VAC, for AUTODOME, MIC7000
Power supply for AUTODOME 7000, MIC IP cameras without illuminators.
120VAC in, 24VAC out
Order number **VG4-A-PSU1**

VG4-A-PSU2 Power supply, 230VAC, AUTODOME, MIC7000
Power supply for AUTODOME 7000, MIC IP cameras without illuminators.
230VAC in, 24VAC out
Order number **VG4-A-PSU2**

MIC-ALM-WAS-24 Interface box, alarm, washer pump, 24VAC
Interface box for alarms and washer pump connections for cameras in the MIC7000, MIC7100i, and MIC IP fusion 9000i product families. Requires user-supplied 24 VAC, 50/60 Hz input. Impact-resistant polycarbonate enclosure. IP67 and NEMA 4X rated ingress. Includes four (4) watertight glands. Grey (RAL 7035) enclosure color.
Order number **MIC-ALM-WAS-24**

MIC-DCA-HB Deep conduit mount, M25 holes, black
DCA mount for MIC7000 family and MIC IP fusion 9000i cameras. Aluminum. Two M25 holes for conduit/cable glands.

Black (RAL 9005) color.
Order number **MIC-DCA-HB**

MIC-DCA-HBA Deep conduit mount, M25 holes, black
DCA mount for MIC7000 and MIC IP fusion 9000i cameras. Aluminum. Two M25 holes for conduit/cable glands. Includes an conduit adapter (male M25 to female 3/4" NPT). Available in specific regions only.
Black (RAL 9005) color.
Order number **MIC-DCA-HBA**

MIC-DCA-HW Deep conduit mount, two M25 holes, white
DCA mount for MIC7000 family and MIC IP fusion 9000i cameras. Aluminum. Two M25 holes for conduit/cable glands.
White (RAL 9010) color.
Order number **MIC-DCA-HW**

MIC-DCA-HWA Deep conduit mount, M25 holes, white
DCA mount for MIC7000 and MIC IP fusion 9000i cameras. Aluminum. Two M25 holes for conduit/cable glands. Includes an conduit adapter (male M25 to female 3/4" NPT). Available in specific regions only.
White (RAL 9010) color.
Order number **MIC-DCA-HWA**

MIC-DCA-HG Deep conduit mount, two M25 holes, grey
DCA mount for MIC7000 family and MIC IP fusion 9000i cameras. Aluminum. Two M25 holes for conduit/cable glands.
Grey (RAL 7001) color. Available in specific regions only.
Order number **MIC-DCA-HG**

MIC-DCA-HGA Deep conduit mount, M25 holes, grey
DCA mount for MIC7000 and MIC IP fusion 9000i cameras. Aluminum. Two M25 holes for conduit/cable glands. Includes an conduit adapter (male M25 to female 3/4" NPT). Available in specific regions only.
Grey (RAL 7001) color.
Order number **MIC-DCA-HGA**

MIC-SCA-BD Shallow conduit adapter, black sand
Shallow conduit adapter for a MIC-WMB, a MIC-PMB, or a MIC-SPR, black sand finish (RAL9005)
Order number **MIC-SCA-BD**

MIC-SCA-WD Shallow conduit adapter, white sand
Shallow conduit adapter for a MIC-WMB, a MIC-PMB, or a MIC-SPR mount, white sand finish (RAL9010)
Order number **MIC-SCA-WD**

MIC-SCA-MG Conduit adapter, shallow, grey sand
Shallow conduit adapter for a MIC-WMB, a MIC-PMB, or a MIC-SPR.
Grey (RAL 7001). Available in specific regions only.
Sand finish.
Order number **MIC-SCA-MG**

MIC-WMB-BD Wall mount bracket , black

Wall mount bracket, black sand finish (RAL9005)

Order number **MIC-WMB-BD**

MIC-WMB-WD Wall mount bracket, white

Wall mount bracket, white sand finish (RAL9010)

Order number **MIC-WMB-WD**

MIC-WMB-GD Wall mount bracket , grey sand

Wall mount bracket, Grey (RAL 9006), sand finish, for MIC-612xxxG36x series cameras

Order number **MIC-WMB-GD**

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-CMB-BD Corner mount bracket, black

Corner mount bracket, black sand finish (RAL9005)

Order number **MIC-CMB-BD**

MIC-CMB-WD Corner mount bracket, white

Corner mount bracket, white sand finish (RAL9010)

Order number **MIC-CMB-WD**

MIC-CMB-MG Corner mount bracket, grey sand

Corner mount bracket.

Grey (RAL 7001). Available in specific regions only.

Sand finish.

Order number **MIC-CMB-MG**

MIC-SPR-BD Wall mount spreader plate, black sand

Aluminum spreader plate suitable for brickwork surface mounting, black sand finish (RAL9005)

Order number **MIC-SPR-BD**

MIC-SPR-WD Wall mount spreader plate, white sand

Aluminum spreader plate suitable for brickwork surface mounting, white sand finish (RAL9010)

Order number **MIC-SPR-WD**

MIC-SPR-GD Wall mount spreader plate, grey sand

Aluminum spreader plate suitable for brickwork surface mounting, grey sand finish (RAL 9006), for MIC-612xxxG36x series cameras

Order number **MIC-SPR-GD**

MIC-M25XNPT34 Adapter, M25 to 3/4"NPT, stainless steel

Stainless Steel M25 to 3/4" NPT thread adapter

Order number **MIC-M25XNPT34**

MIC-WKT-IR Washer kit, MIC IR

Washer kit for MIC IP starlight 7000i and MIC IP fusion 9000i camera models

Washer kit for analog infrared MIC camera models

Order number **MIC-WKT-IR**

MIC-9K-IP67-5PK Connector kit thermal PTZ IP67 5pieces

5-pack weather protection kit for MIC IP fusion 9000i thermal cameras. Provides an IP67-rated barrier against dust or moisture. White color.

Order number **MIC-9K-IP67-5PK**

MIC-7100i-SNSHLD-W Sunshield for MIC 7100i white

Sunshield for MIC IP ultra 7100i camera models

Order number **MIC-7100i-SNSHLD-W**

Software Options**MVS-FCOM-PRCL License key for serial protocol**

Serial Protocol Software License (e-license) for IP Cameras

Order number **MVS-FCOM-PRCL**

MVC-CT-PTZ License for PTZs

Camera Trainer license for Intelligent Video Analytics 7.10 on PTZ cameras.

Free-of-charge software module.

Order number **MVC-CT-PTZ**

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
emea.securitysystems@bosch.com
emea.boschsecurity.com

Germany:

Bosch Sicherheitssysteme GmbH
Robert-Bosch-Ring 5
85630 Grasbrunn
Germany
www.boschsecurity.com

North America:

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

Asia-Pacific:

Robert Bosch (SEA) Pte Ltd, Security Systems
11 Bishan Street 21
Singapore 573943
Phone: +65 6571 2808
Fax: +65 6571 2699
apr.securitysystems@bosch.com
www.boschsecurity.asia