MIC IP starlight 7000i

Exceptional strength and ruggedness for any outdoor application including traffic monitoring (bridges, tunnels, or highways), perimeter protection, city surveillance, and mining

Built-in Intelligent Video Analytics alert operators in case of unusual scene activity

Edge intelligence with Intelligent Tracking and object detection even when the camera is moving

Starlight camera technology with excellent low-light sensitivity (color = 0.0077 lx) and High dynamic range (120 dB) (to see details in bright and dark areas simultaneously)

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

Functions

Exceptional low-light performance
The latest sensor technology combined with the sophisticated noise suppression results in an exceptional sensitivity in color. The low-light performance is so good that the camera continues to provide excellent color performance even with a minimum of ambient light.

High dynamic range
The dynamic range of the camera is outstanding and is obvious in real-world performance comparisons. In extended dynamic range mode, the camera uses an electronic shutter to capture four images with different exposure time and reproduce a high-contrast frame. The result is that you can view details in both the bright areas (highlights) and the dark areas (shadows) of a scene at the same time. You can easily distinguish objects and features (for example, faces) with bright backlight.

The MIC IP starlight 7000i camera is an advanced PTZ surveillance platform for mission-critical applications. With starlight imaging technology and excellent low-light sensitivity, the MIC IP starlight 7000i camera is the perfect solution for robust and high-quality imaging needs.

The camera’s true advantage is its rugged design combined with Intelligent Video Analytics developed specifically for the most demanding environments. The camera is well-suited for extreme environments and adverse weather conditions such as high winds, rain, fog, ice, and snow. The camera operates at extreme temperatures ranging from -40 °C to +65 °C (-40 °F to +149 °F). Even in extreme conditions and challenging illumination scenarios, the camera provides the highest-quality video images and relevant data interpreted directly at the source. H.265 compression technology, Intelligent Dynamic Noise Reduction and dynamic Encoder Regions contribute to bit rate saving.
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 salt spray per ISO 12944-6: C5-M (High); Aluminum Housing Components.

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.

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. The following table identifies the application for each type of LED.

<table>
<thead>
<tr>
<th>Application</th>
<th>Type of illuminator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Close-range illumination</td>
<td>940 nm IR LEDs</td>
</tr>
<tr>
<td>Long-range detection</td>
<td>850 nm IR LEDs</td>
</tr>
<tr>
<td>Identification and deterrent</td>
<td>White light LEDs</td>
</tr>
</tbody>
</table>

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.

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.
**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.

**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**
As PTZ cameras continue to increase their optical zoom capabilities, image stabilization becomes critical to eliminate movement caused by unstable camera mounts. Minor movement of the camera mount can shift the field of view by a large distance when the camera is zoomed to a high value. This can render images unusable. The camera incorporates an Image Stabilization algorithm that allows the camera to detect continuous vibration. 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.

**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

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

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.

**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 (NPD-6001B) can supply power to models without an illuminator accessory. The 95 W midspan (NPD-9501A) can supply power to all models of MIC IP starlight 7000i, 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). Refer to the table in the Installation/configuration notes section for more information.

**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.

**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 61000-3-3
- EN 50121-4 (Railway applications)
- EN 55032
- EN 61000 3-2
- AS/NZS CISPR 22

**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.

<table>
<thead>
<tr>
<th>CAMERA MODELS</th>
<th>60 W midspan</th>
<th>95 W midspan</th>
<th>VIDEOJET connect 7000</th>
<th>24 VAC PSU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Models with illuminator</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Models without illuminator</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

To keep the IP68 rating of the camera, you must use a MIC-SCA in combination with a MIC-WMB. Each mount is sold separately.

**Technical specifications**

**MIC IP starlight 7000i**

<table>
<thead>
<tr>
<th>Imager</th>
<th>1/2.8-type Exmor R CMOS sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective Picture Elements (Pixels)</td>
<td>1945 x 1097 (2.13 MP)</td>
</tr>
<tr>
<td>Lens</td>
<td>30x motorized Zoom 4.3 mm to 129 mm F1.6 to F4.7</td>
</tr>
<tr>
<td>Field of View (FOV)</td>
<td>2.3° to 63.7°</td>
</tr>
<tr>
<td>Focus</td>
<td>Automatic with manual override</td>
</tr>
<tr>
<td>Iris</td>
<td>Automatic with manual override</td>
</tr>
<tr>
<td>Digital Zoom</td>
<td>12x</td>
</tr>
<tr>
<td>Video performance - Sensitivity</td>
<td>(3100K, reflectivity 89%, 1/30, F1.6, 30 IRE)</td>
</tr>
<tr>
<td>Color</td>
<td>0.0077 lx</td>
</tr>
<tr>
<td>Monochrome</td>
<td>0.0008 lx</td>
</tr>
</tbody>
</table>

**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.

**Video performance - Dynamic range**
High dynamic range
120 dB WDR
Measured according to IEC 62676 Part 5
100 dB WDR

**Noise Reduction**
Intelligent Dynamic Noise Reduction

**Image Stabilization**
On, Off, Auto

<table>
<thead>
<tr>
<th>DORI</th>
<th>DORI definition</th>
<th>Distance to Object</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>WIDE 1X</td>
</tr>
<tr>
<td>Detect</td>
<td>25 px/m (8 px/ft)</td>
<td>62 m (203 ft)</td>
</tr>
<tr>
<td>Observe</td>
<td>63 px/m (19 px/ft)</td>
<td>25 m (81 ft)</td>
</tr>
<tr>
<td>Recognize</td>
<td>125 px/m (38 px/ft)</td>
<td>12 m (41 ft)</td>
</tr>
<tr>
<td>Identify</td>
<td>250 px/m (76 px/ft)</td>
<td>6 m (20 ft)</td>
</tr>
</tbody>
</table>

**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
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)**
- 1080p HD: 1920 x 1080
- 720p HD: 1280 x 720
- 1.3 MP 5:4 (cropped): 1280 x 1024
- D1 4:3 (cropped): 704 x 480
- 640x480: 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

**Data Rate (H.265, 1080P)**
60 fps: 166 ms (typical)
30 fps: 233 ms (typical)

**Overall IP Delay**
60fps: 200ms (typical)

**Connectivity**
ONVIF Profile S
ONVIF Profile G
Auto-MDIX
The average typical optimized bitrate in kbits/s for various frame rates is shown in the table:

<table>
<thead>
<tr>
<th>FPS</th>
<th>1080p</th>
<th>720p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H.264</td>
<td>H.265</td>
</tr>
<tr>
<td>60</td>
<td>4200</td>
<td>1649</td>
</tr>
<tr>
<td>30</td>
<td>2600</td>
<td>1413</td>
</tr>
<tr>
<td>15</td>
<td>2100</td>
<td>1157</td>
</tr>
<tr>
<td>12</td>
<td>1800</td>
<td>1075</td>
</tr>
<tr>
<td>5</td>
<td>1250</td>
<td>746</td>
</tr>
<tr>
<td>2</td>
<td>500</td>
<td>407</td>
</tr>
</tbody>
</table>

Actual bitrate may vary depending on the scene complexities and encoding configurations.

**Miscellaneous**

<table>
<thead>
<tr>
<th>Sectors / Title</th>
<th>4, 8, 12, or 16 user-selectable, independent Sectors, each with 20 characters per Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privacy Masks</td>
<td>24 individually configurable Privacy Masks; maximum 8 per Pre-position; programmable with 3, 4 or 5 corners; selectable color of Black, White, Gray, “Auto” (average background color)</td>
</tr>
<tr>
<td>Virtual Masks</td>
<td>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.</td>
</tr>
<tr>
<td>Pre-positions</td>
<td>256 Pre-positions, each with 20 characters per Title</td>
</tr>
<tr>
<td>Guard Tours</td>
<td>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 64 user-defined scenes</td>
</tr>
<tr>
<td>Supported Languages</td>
<td>English, Czech, Dutch, French, German, Italian, Polish, Portuguese, Russian, Spanish, Japanese, Chinese</td>
</tr>
<tr>
<td>Washer Pump Interface</td>
<td>Control functions integrated. MIC Alarm/Washer Interface Unit (MIC-ALM-WAS-24, sold separately) provides electrical interface to user supplied washer pump device.</td>
</tr>
<tr>
<td>Camera status monitoring</td>
<td>Integrated sensors monitor operational status such as internal temperature, humidity level, incoming voltage level, vibration, and shock events.</td>
</tr>
</tbody>
</table>

**Mechanical**

| Drive Unit | Brushless, integral pan/tilt motor drive |
| Supported mounting orientation | Upright, Inverted, Canted |

**Pan Range**

| 360° continuous rotation |

**Tilt Angle**

| Without illuminators (camera 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**

| Without illuminators: +/-0.06° |
| With illuminators: +/-0.07° |

**Proportional Pan / Tilt to Zoom**

| Yes |

**Audible Noise**

| <65 dB |

**Electrical**

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>21-30 VAC, ±10%, 50/60 Hz, and/or High Power over Ethernet (56 VDC nominal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Consumption (typical)</td>
<td>Without illuminator: 40 W</td>
</tr>
<tr>
<td></td>
<td>With illuminator: 70 W</td>
</tr>
<tr>
<td>Current Consumption</td>
<td>40 W (24 VAC): 1.67 A</td>
</tr>
<tr>
<td></td>
<td>70 W (24 VAC): 2.9 A</td>
</tr>
<tr>
<td></td>
<td>40 W (High PoE): 0.73 A</td>
</tr>
<tr>
<td></td>
<td>70 W (High PoE): 1.25 A</td>
</tr>
<tr>
<td>Redundant configuration</td>
<td>Connect both a High PoE Midspan and a separate 24 VAC power source. If either the High PoE or the 24 VAC power source fails, the camera seamlessly transitions over to use the remaining power source.</td>
</tr>
<tr>
<td>Surge protection</td>
<td>Built-in surge protection for power, data, and network interfaces</td>
</tr>
</tbody>
</table>

**Accessory Interface/Control Data**

| RS-485, Simplex, half and full duplex, user-selectable baud rate or auto-baud |
| Used to communicate with optional MIC Alarm/Washer Interface box (MIC-ALM-WAS-24) or Bosch OSDR, Pelco P/D, Forward Vision, and Cohu serial protocols. |
| Power, pigtail | 24 VAC (nominal) |
| Chassis ground | Ground wire with connector lug |
### Power, Network
- Without illuminator: RJ45 100BASE-TX Ethernet High PoE Midspan - 60 W (NPD-6001B) or 95 W (NPD-9501A)
- With illuminator: 95 W High PoE Midspan (NPD-9501A)*

### Power, Camera
- 24 VAC (power supply)

### Video and Control
- RJ45 100BASE-TX Ethernet RS-485 Simplex 9600 baud (dedicated for MIC-ALM-WAS-24)

### Alarm/Washer
- 3-wire RS-485

* Must purchase either NPD-9501A or VIDEOJET connect 7000 (VJC-7000-90) 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 OSRD, Pelco P/D, Forward Vision, and Cohu
  - **Note**: For Pelco, Forward Vision, and Cohu protocols, a separate license (MVS-FCOM-PRCL) is required.

### Environmental
- **Note**: Unit includes internal heater and fan.

### Ingress Protection Rating/Standard
- IEC 60529 IP68 / Type 6P (dust and immersion) when installed on a MIC-DCA or on a MIC wall mount
- IP67 (moisture and dust) rating on connectors in the base of the camera when using the IP67 Connector Kit (MIC-IP67-5PK), which is also required when using non-Bosch mounts

### External Mechanical Impact (IK Code or 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
- -60 °C to +70 °C (-76 °F to +158 °F)

### Humidity
- 0-100%

### Wind Load
- 241 km/h (150 mph) (sustained)
- (Gusts up to 290 km/h (180 mph))
- MIC camera w/ illuminator
- Coefficient of Drag: 1.370
- Effective Projected Area (EPA): 0.089 m² (0.96 ft²)

### Vibration
- IEC 60068-2-6, Test Fc: Vibration (sinusoidal), 10m/s² (1.0G)
- NEMA TS2 Section 2.2.8 Vibration: 5-30 Hz, (0.5G)
- Sinusoidal vibration test IAW MIL-STD-167-1A

### Shock
- IEC 60068-2-27, Test Ea: Shock, Half Sine Impulse, 11 ms, 40G, non-repetitive shocks (three shocks in each axis and in each direction)
- NEMA TS 2 Section 2.2.9 Shock (Impact) Test Half sine wave 11 ms, 10G

### Salt Mist Spray (Corrosion Test)
- ASTM B117 (2000 hours)

### Construction
- **Dimensions (W x H x D)**
  - Without illuminator accessory or sunshield:
    - Upright, Inverted: 217.75 mm x 368.89 mm x 178.33 mm (8.57 in. x 14.52 in. x 7.02 in.)
    - Canted: 217.75 mm x 330.96 mm x 239.68 mm (8.57 in. x 13.03 in. x 9.44 in.)
  - Without illuminator accessory, but with sunshield:
    - Upright, Inverted: 217.75 mm x 392.20 mm x 178.33 mm (8.57 in. x 14.65 in. x 7.02 in.)
    - Canted: 217.75 mm x 334.27 mm x 239.68 mm (8.57 in. x 13.16 in. x 9.44 in.)
  - With illuminator accessory:
    - Upright, Inverted: 217.75 mm x 439.91 mm x 178.33 mm (8.57 in. x 17.32 in. x 7.02 in.)
    - Canted: 217.75 mm x 401.98 mm x 239.68 mm (8.57 in. x 15.83 in. x 9.44 in.)

### Weight
- 6.7 kg (14.7 lb)
- 7.9 kg (17.4 lb) with attached illuminator

### Window
- Tempered flat glass

### Construction Material
- Cast solid aluminum

### Window Wiper
- Integrated, long-life silicone wiper
<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunshield</td>
<td>Optional; sold separately</td>
</tr>
<tr>
<td>(to prevent sun</td>
<td></td>
</tr>
<tr>
<td>load in hot climates)</td>
<td></td>
</tr>
<tr>
<td>Canting</td>
<td>On-site canting functionality</td>
</tr>
<tr>
<td>Standard Colors</td>
<td>Black (RAL 9005), White (RAL 9010), or Grey (RAL 7001, available in specific</td>
</tr>
<tr>
<td></td>
<td>regions only)</td>
</tr>
<tr>
<td>Standard Finish</td>
<td>Chromate-based surface treatment with powder coat paint, sand finish</td>
</tr>
</tbody>
</table>

**Dimensional Drawings**

Front view - upright

Front view - inverted

Front view - canted

Front view, with illuminator - upright
Ordering information

**MIC-7502-Z30B PTZ camera 2MP HDR 30x IP68 black**
Ruggedized 1080p50/60 HD PTZ day/night camera with 30x zoom, starlight imaging; PoE; IVA. Easy install with hinged DCA mount (sold separately). Optional illuminator (sold separately). Black (RAL 9005). Sand finish.
Order number **MIC-7502-Z30B**

**EWE-MIC7DY-IW 12mths wrty ext MIC IP starlight 7000i**
12 months warranty extension without moving parts, wear parts are excluded
Order number **EWE-MIC7DY-IW**

**MIC-7502-Z30W PTZ camera 2MP HDR 30x IP68 white**
Ruggedized 1080p50/60 HD PTZ day/night camera with 30x zoom, starlight imaging; PoE; IVA. Easy install with hinged DCA mount (sold separately). Optional illuminator (sold separately). White (RAL 9010). Sand finish.
Order number **MIC-7502-Z30W**

**EWE-MIC7DY-IW 12mths wrty ext MIC IP starlight 7000i**
12 months warranty extension without moving parts, wear parts are excluded
Order number **EWE-MIC7DY-IW**

**MIC-7502-Z30G PTZ camera 2MP HDR 30x IP68 gray**
Ruggedized 1080p50/60 HD PTZ day/night camera with 30x zoom, starlight imaging; PoE; IVA. Easy install with hinged DCA mount (sold separately). Optional illuminator (sold separately). Grey (RAL 7001) color. Available in specific regions only.
Order number **MIC-7502-Z30G**

**EWE-MIC7DY-IW 12mths wrty ext MIC IP starlight 7000i**
12 months warranty extension without moving parts, wear parts are excluded
Order number **EWE-MIC7DY-IW**

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**MIC 7000i series Optional Mounts**

<table>
<thead>
<tr>
<th>1</th>
<th>Deep conduit adapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Wall mount bracket</td>
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<tr>
<td>3</td>
<td>Pole mount bracket</td>
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<tr>
<td>4</td>
<td>Corner mount bracket</td>
</tr>
<tr>
<td>5</td>
<td>Wall mount spreader plate</td>
</tr>
<tr>
<td>6</td>
<td>Shallow conduit adapter</td>
</tr>
</tbody>
</table>

Not all models and/or accessories listed in **Ordering information** may be available in all regions and/or countries. Please contact your local Bosch representative for further details.
Accessories

MIC-ILB-300 Illuminator white-IR light 450m, black
Illuminator accessory for MIC IP starlight 7000i cameras. Combination of IR (850 nm/940 nm) + White light (5600-6300K) LEDs.
Black (RAL 9005). Sand finish.
Order number MIC-ILB-300

MIC-ILW-300 Illuminator white-IR light 450m, white
Illuminator accessory for MIC IP starlight 7000i cameras. Combination of IR (850 nm/940 nm) + White light (5600-6300K) LEDs.
White (RAL 9010). Sand finish.
Order number MIC-ILW-300

MIC-ILG-300 Illuminator white-IR light 450m, gray
Illuminator accessory for MIC IP starlight 7000i cameras. Combination of IR (850 nm/940 nm) + White light (5600-6300K) LEDs.
Grey (RAL 7001) color. Available in specific regions only.
Order number MIC-ILG-300

NPD-6001B High PoE midspan
High PoE Midspan, 60 W, single port, AC in
Order number NPD-6001B

NPD-9501A Midspan, high PoE, single port, AC in
High PoE, 95 W, Single port indoor Midspan.
120/230VAC input. Supplies a data and power interface to camera using a single standard CAT5e (or better) network cable.
Order number NPD-9501A

VG4-A-PSU1 PSU, 120VAC, for AUTODOME, MIC7000
Power supply, 120VAC input, 24VAC output @ 96VA.
Suitable for powering AUTODOME, MIC IP 7000, and MIC IP fusion 9000i cameras. White aluminum enclosure with cover. IP66 ingress. IK10 impact.
Order number VG4-A-PSU1

VG4-A-PSU2 Power supply, 230VAC, AUTODOME, MIC7000
Power supply, 230VAC input, 24VAC output @ 96VA.
Suitable for powering AUTODOME, MIC IP 7000, and MIC IP fusion 9000i cameras. White aluminum enclosure with cover. IP66 ingress. IK10 impact.
Order number VG4-A-PSU2

VJC-7000-90 PSU, PoE IP, 100-240VAC, 50/60Hz
IP power supply unit with PoE, 100 VAC – 240 VAC (90 VAC -264 VAC with tolerance), 50/60 Hz.
Order number VJC-7000-90

MIC-ALM-WAS-24 Interface box, alarm, washer pump, 24VAC
Order number MIC-ALM-WAS-24

MIC-DCA-HB Deep conduit mount, M25 holes, black
Order number MIC-DCA-HB

MIC-DCA-HBA Deep conduit mount, M25 holes, black
Order number MIC-DCA-HBA

MIC-DCA-HW Deep conduit mount, two M25 holes, white
DCA mount for MIC7000 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, two M25 holes, white
Order number MIC-DCA-HWA

MIC-DCA-HG Deep conduit mount, two M25 holes, grey
DCA mount for MIC7000 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, two M25 holes, grey
Order number MIC-DCA-HGA

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-MG Wall mount bracket for rugged PTZ camera, grey
Wall Mount Bracket.
Grey (RAL 7001). Available in specific regions only. Sand finish.
Order number MIC-WMB-MG

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-MG Wall mount spreader plate, grey sand
Aluminum spreader plate suitable for brickwork surface mounting.
Grey (RAL 7001). Available in specific regions only.
Sand finish.
Order number MIC-SPR-MG

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-M25XNPT34 Adapter, M25 to 3/4”NPT, stainless steel
Stainless Steel M25 to ¾” NPT thread adapter
Order number MIC-M25XNPT34

MIC-67SUNSHLD Sunshield for MIC7000 series, white
Three-part molded sunshield for MIC7000 cameras – 1 bottom shell, 2 top shells (1 for around the optional illuminator accessory). White.
Order number MIC-67SUNSHLD

MIC-IP67-5PK Connector kit, IP67, 5pcs
5-pack weather protection kit for MIC7000 cameras.
Provides an IP67-rated barrier against dust or moisture. Recommended when MIC camera is mounted directly to installation surface (instead of onto a MIC-DCA or MIC wall mount).
Order number MIC-IP67-5PK

MIC-WKT-IR Washer kit, MIC IR
Washer kit for MIC IP starlight 7000i and MIC IP fusion 9000i camera models
Order number MIC-WKT-IR

Software Options
MVS-FCOM-PRCL License key for serial protocol
Serial Protocol Software License (e-license) for IP Cameras
Order number MVS-FCOM-PRCL

Services
EWE-MIC7DY-IW 12mths wrty ext MIC IP starlight 7000i
12 months warranty extension without moving parts, wear parts are excluded
Order number EWE-MIC7DY-IW

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