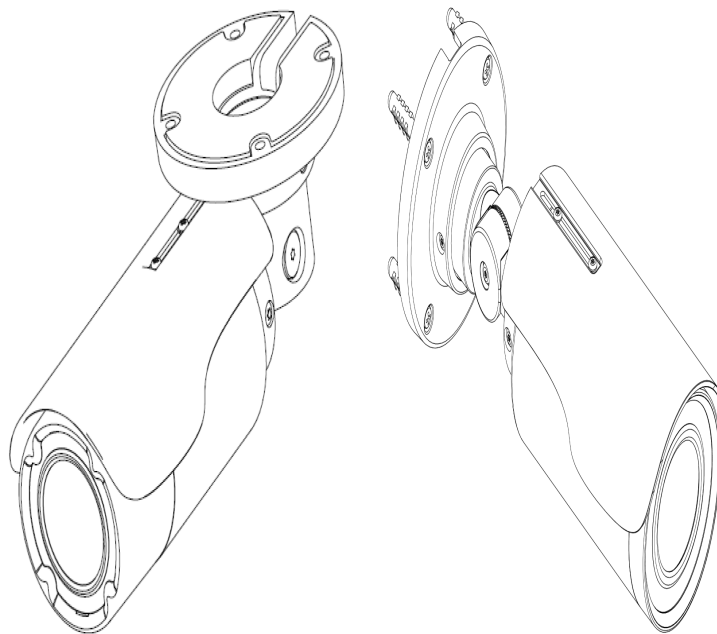


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Illustra Flex Series 3MP and 8MP Outdoor Bullet Cameras Quick Start Guide



Johnson
Controls

The Johnson Controls logo, featuring a stylized globe composed of curved lines in shades of blue and green.

Notice

Please read this manual thoroughly and save it for future use before attempting to connect or operate this unit.

The information in this manual was current when published. The manufacturer reserves the right to revise and improve its products. All specifications are therefore subject to change without notice.

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Warning

- This unit operates at AC 24V/ PoE.
- Installation and service should be performed only by qualified and experienced technicians and comply with all local codes and rules to maintain your warranty.
- To reduce the risk of fire or electric shock, do not expose the product to rain or moisture.
- Wipe the camera with a dry soft cloth. For tough stains, slightly apply with diluted neutral detergent and wipe with a dry soft cloth.
- Do not apply benzene or thinner to the camera, which may cause the surface of the unit to be melted or lens to be fogged.
- Avoid aligning the lens to very bright objects (example, light fixtures) for long periods of time.
- ITE is to be connected only to PoE networks without routing to the outside plant.
- The power supply shall be approved for ITE NEC Class 2 or LPS with a rating of 24VAC, 550mA minimum and 50 degrees Celsius.
- Video Out connection should be intra-building only.
- Avoid operating or storing the unit in the following locations:
 - Extremely humid, dusty, or hot/cold environments. Recommended operating temperature is : -40°C to 50°C (-40°F to 122°F). PoE does not support heater.
 - Near sources of powerful radio or TV transmitters.
 - Near fluorescent lamps or objects with reflections.
 - Under unstable or flickering light sources.

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN		THIS SYMBOL INDICATES THAT DANGEROUS VOLTAGE CONSTITUTING A RISK OF ELECTRIC SHOCK IS PRESENT WITHIN THE UNIT.
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.			THIS SYMBOL INDICATES THAT IMPORTANT OPERATING AND MAINTENANCE INSTRUCTIONS ACCOMPANY THIS UNIT.



WEEE (Waste Electrical and Electronic Equipment). Correct disposal of this product (applicable in the European Union and other European countries with separate collection systems). This product should be disposed of, at the end of its useful life, as per applicable local laws, regulations, and procedures.



Illustra Flex Series 3MP and 8MP Outdoor Bullet Cameras

Product features

Lens cases require special care when handling and cleaning to avoid scratches. For information on bubble handling and cleaning, see *8200-1174-01 Bubble Clearing Procedure Application Note*.

Go to <https://illustracameras.com/products>.

From the Products page, select your camera product range and then select your camera model. Click **Downloads** and search for *Bubble Handling and Cleaning Procedure*.

Product overview

This chapter explains the features and installation of the Illustra Flex Bullet cameras. Product code and description of the camera is provided in the table below.

Table 1 Product code and description of the Illustra Flex Bullet cameras

Product Code	Model Name	Description
IFS03B1BNWIT	Illustra Flex 3MP IK7 Bullet	Illustra Flex 3MP Bullet, 2.8-12mm, outdoor, non-vandal, white, TDN w/IR, TWDR
IFS08B2ONWIT	Illustra Flex 8MP IK9 Bullet	Illustra Flex 8MP Bullet, 3.4-9mm, outdoor, non-vandal, white, TDN w/IR, TWDR
IFS03B1ONWIT	Illustra Flex 3MP IK10 Bullet	Illustra Flex 3MP Bullet, 2.8-12mm, outdoor, vandal, white, TDN w/IR, TWDR
IFS03B1ONWITA	Illustra Flex 3MP IK10 Bullet	Illustra Flex 3MP Bullet, 2.8-12mm, outdoor, vandal, white, TDN w/IR, TWDR
IFS08B2ONWITA	Illustra Flex 8MP IK10 Bullet	Illustra Flex 8MP Bullet, 3.4-9mm, outdoor, vandal, white, TDN w/IR, TWDR

Figure 2 Illustra Flex 3MP and 8MP Bullet Cameras

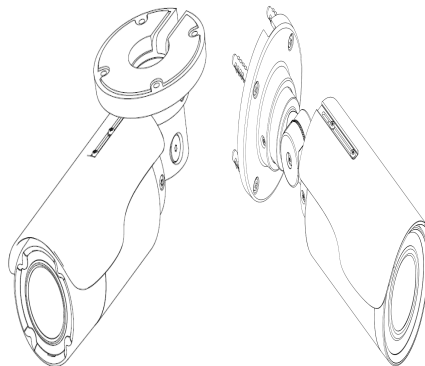


Figure 3 on page 2 and Figure 4 on page 3 illustrates dimensions and physical properties of the units as well as a pictorial index of the camera connectors. Descriptions of these connectors are available in Table 5 on Page 3.

Note: The connector cable of the Outdoor Bullet Camera should be contained in a conduit suitable for outdoor use.

Figure 3 3MP Camera (IFS03B1BNWIT) dimensions (mm) and pictorial index

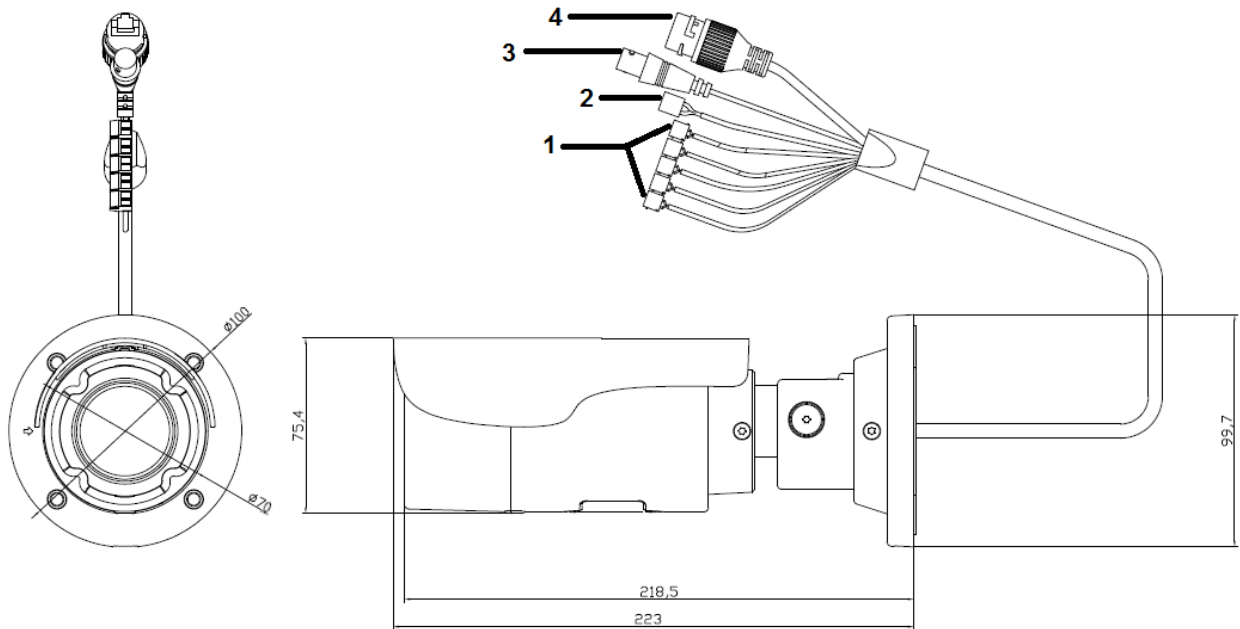


Figure 4 3MP (IFS03B1ONWIT) and 8MP Cameras dimensions (mm) and pictorial index

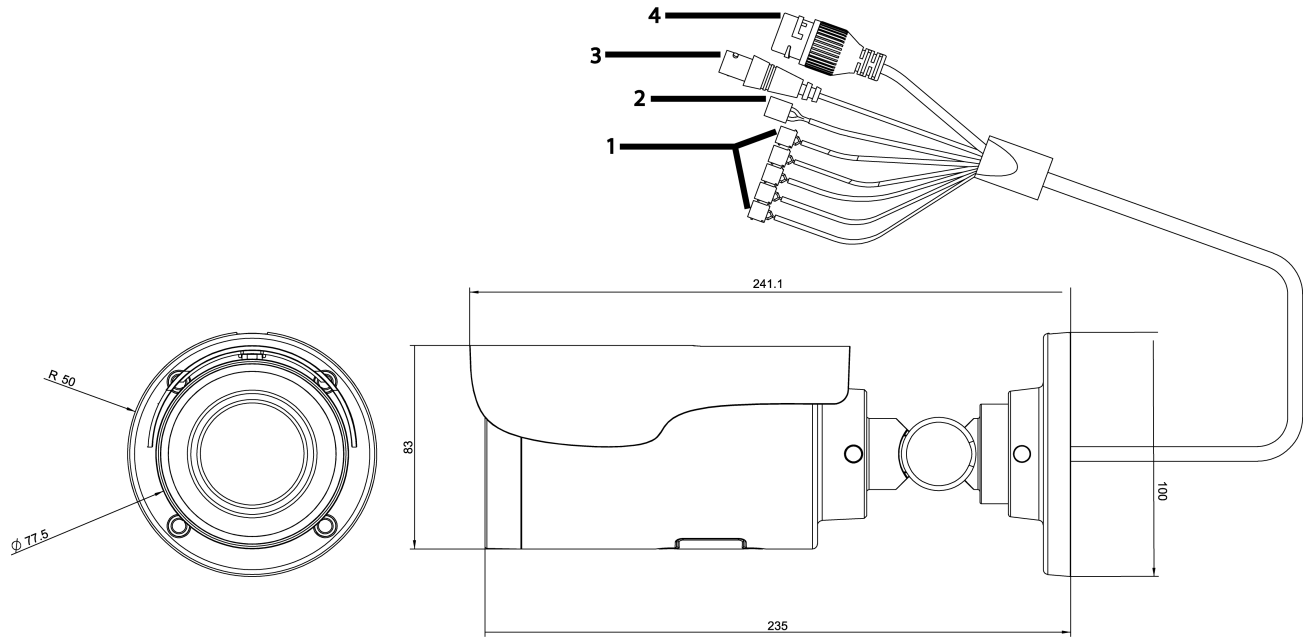








Table 5 Pictorial index descriptions

Index number	Name	Description
1	I/O connectors	Connection for Input/Output devices.
2	Power Connector	Connection to the external power source at AC 24V only.
3	BNC cable	Connection for a BNC cable for analog out.
4	RJ-45 Ethernet Connector/Power over Ethernet (PoE)	Connection for the RJ-45 cable for network connection as well as PoE.

The input and output cables of the Illustra Flex Bullet cameras are labeled with icons that designate their usage. Input/Output connector descriptions on page 4 illustrates and describes these icons.

Table 6 Input/Output connector descriptions

Icon	Description
	Alarm In
	Alarm Out
	Audio In
	Audio Out
	Power
	Ground

You can find the interior buttons and ports on the base of the Illustra Flex Bullet camera. Remove the two screws to open the cover for access to these pins. Refer to Figure 7 on page 4 and Table 8 on Page 5 for descriptions of these buttons and ports.

Figure 7 Interior buttons and ports of the Illustra Flex Bullet cameras

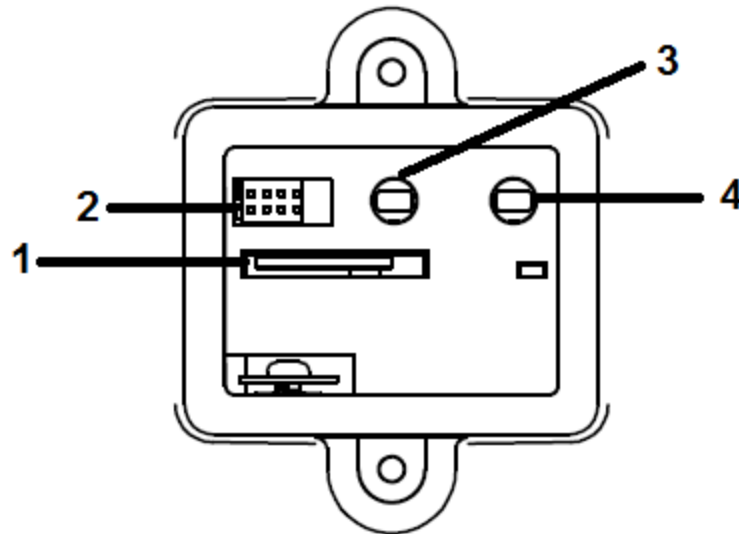


Table 8 Descriptions of the interior buttons and ports of the Illustra Flex Bullet camera

Index number	Name
1	Micro SD card slot
2	Serial port
3	Default: returns to factory default by pressing the button for five seconds
4	Reset: system restart

CAUTION	When removing the screws for the default/reset cover, ensure you replace and tighten the screws to avoid water leaking after adjustment.
----------------	--

NOTE	Connectors and field wiring terminals for external Class 2 circuits provided with marking indicating minimum Class of wiring should be used. Class 2 should be marked adjacent to the field wiring terminals.
-------------	---

Installation

In the box

Check everything in the packing box matches to the order form and the packing slip. In addition to this guide, items below are included in the packing box:

- 1 Network Illustra Flex IR Bullet Camera
- 1 printed Quick Start Guide
- 1 printed Regulatory document
- 4 31mm screws and anchors
- 1 installation template sticker
- 1 Torx 10 and 20 Security L-Key (3MP IK7 Bullet camera)
- 1 T10-T10 Security L-Key (3MP IK10 and 8MP IK9 & IK10 Bullet cameras)

Contact your dealer if any item is missing.

Installation tools

The following tools assist with installation:

- a drill
- screwdrivers
- wire cutters

Checking appearance

When first unboxing, check whether if there is any visible damage to the appearance of the unit and its accessories. The protective materials used for the packaging should be able to protect the unit from most types of accidents during transportation.

Remove the protective part of the unit when every item is checked in accordance with the list in In the box on page 5.

Procedure 1 Mounting the camera

Step	Action
------	--------

- | | |
|---|---|
| 1 | Affix the mounting template to the surface. After you drill the holes, knock in 4 plastic anchors and then lock in the 4 self-tapping screws to fasten the camera to the surface. |
|---|---|

Figure 9 Mounting the Illustra Flex 3MP (IFS03B1BNWIT) Bullet camera to a ceiling

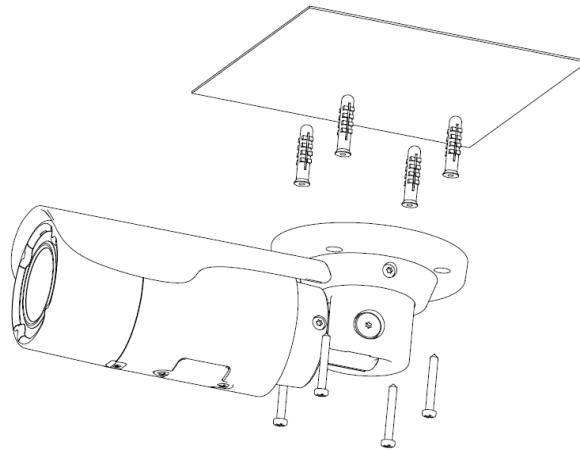
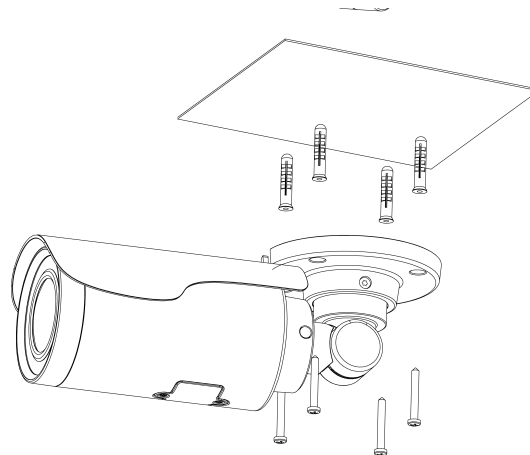


Figure 10 Mounting the Illustra Flex 3MP (IFS03B1ONWIT) and 8MP Bullet cameras to a ceiling



- | | |
|---|---|
| 2 | Mount the unit onto the ceiling and fasten it securely as seen in Figure 9 on page 6 and Figure 10 on page 6 or if mounting onto a wall refer to Figure 11 on page 7 and Figure 12 on page 7. |
|---|---|

Figure 11 Mounting the Illustra Flex 3MP (IFS03B1BNWIT) Bullet camera to a wall

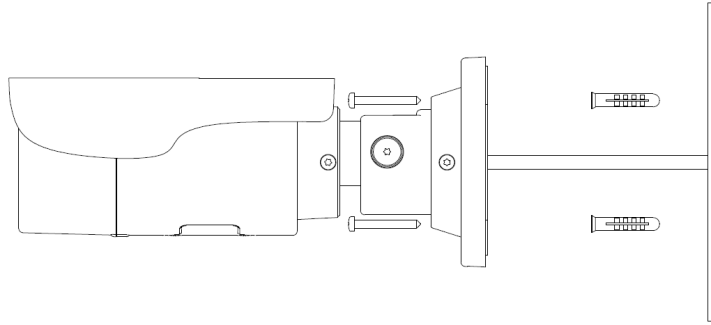
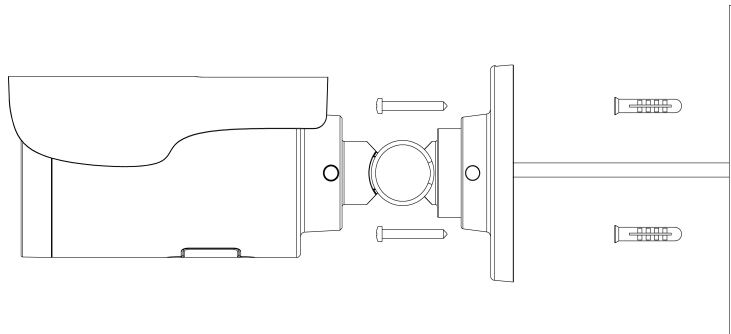


Figure 12 Mounting the Illustra Flex 3MP (IFS03B1ONWIT) and 8MP Bullet cameras to a wall



WARNING	Depending on the material of mounting surface, different screws and anchors than those supplied with the product may be required. To prevent the unit from falling off the surface, ensure that it is mounted to a firm location (ceiling slab or channel) using a safety wire strong enough to withstand the total weight of the unit. Be aware of the finishing at the end of the wire.
CAUTION	Safety wire should be connected, if supplied or ordered separately, with one end the wall or ceiling and the other to the safety-cord screw of the unit. By cabling so, it is possible to prevent the unit from accidental falling in a sudden at any time.

- End -

Procedure 2 Connecting the wires

Step	Action
1	Attach the camera to the fixed surface.
2	Pass all the signal cables through the mounting bracket.
3	Connect the power cable to the power plugs with one of the following options: <ul style="list-style-type: none">a AC 24V: Connect 24V (~) cables to terminals ~AC 24V.b PoE: Connect the RJ-45 jack to a PoE compatible network device that supplies power through the Ethernet cable.
4	Insert audio cable and alarm cable to the unit. Connect the network cable to the RJ-45 terminal of a switch. Refer to Input/Output connector descriptions on page 4 for further information regarding wiring.

Note: The power source needs to be NEC Class 2 or LPS. The PoE connection should be provided by a UL Listed product and the connections shall be made in accordance with Article 800 of the NEC or local regulations.

- End -

Procedure 3 Adjusting the camera position

Step	Action
1	Use the security key to loosen the security torx screw on both sides of the mount bracket so that you can tilt the camera.
2	Loosen the screw on the retaining ring to adjust the camera angle.
3	After adjustments, fasten the screws and retaining ring back to the camera.

Figure 13 Adjusting the 3MP (IFS03B1BNWIT) camera position

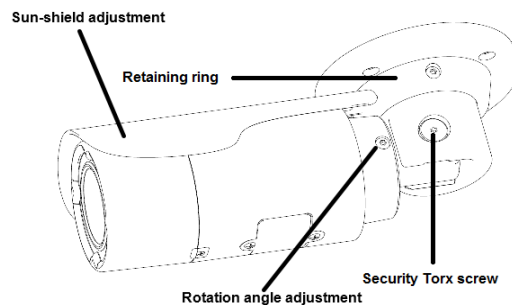
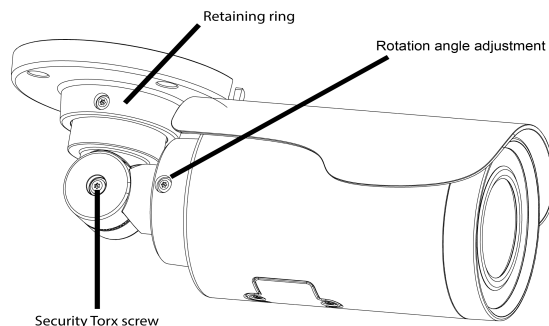


Figure 14 Adjusting the 3MP (IFS03B1ONWIT) and 8MP camera position



- End -

Procedure 4 Adjusting the sun shield hood

Step	Action
------	--------

- | | |
|---|---|
| 1 | Move the sun shield hood forward and backward to adjust the position of sunshade. |
|---|---|

CAUTION	<ul style="list-style-type: none">• Ensure to adjust the sun shield hood in coordination with lens in case of sunshade problems.• To avoid damage to the housing of the unit, do not adjust the sun shield position excessively.
----------------	---

- End -

System requirements

The table below lists the minimum requirement to implement and operate an Illustra Flex Bullet camera.

Table 15 System Requirements

System hardware	
CPU	Intel Pentium 2 2.4GHz or equivalent
RAM	1 GB or above
Display	NVIDIA GeForce 6 Series or ATI Mobility Radeon 9500
System software	
Browser	Microsoft Internet Explorer 9 or above, Firefox, Safari, Chrome
Unit	
Power Supply	AC 24V / PoE
Networking	
Wired	10/100BASE-T Ethernet (RJ-45 connector) NOTE: A switch is required for surveillance on multiple units.
NOTE	All the installation and operations should comply with your local electricity safety rules.
CAUTION	To avoid damage to the unit, never connect more than one type of power supply (PoE IEEE802.3 Ethernet Class 0 or AC24V power plug) at the same time. If using PoE, this camera is to be connecting only to PoE networks without routing to heterogeneous devices.

Network Connection

Default IP Address

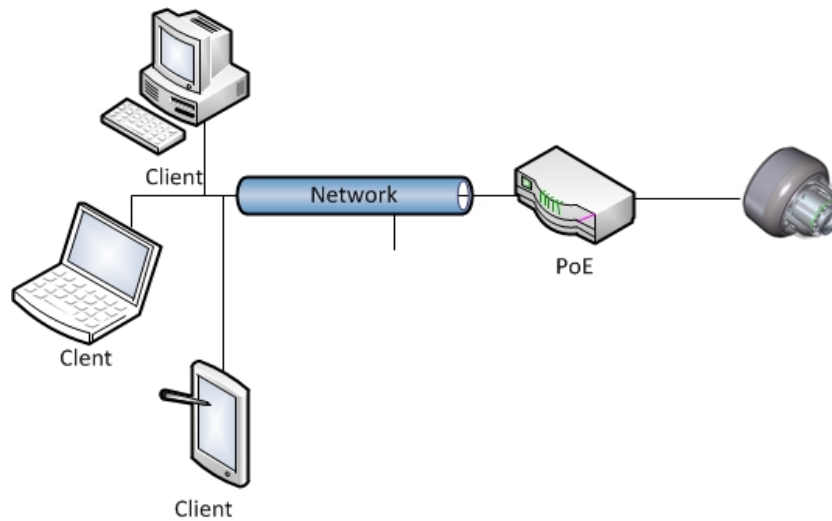
Since this is a network-based unit, an IP address must be assigned at the very first bootup. The default IP address of the unit is 192.168.1.168 and sub mask is 255.255.255.0.

However, if you have a DHCP server in your network, the unit obtains an IP address automatically from the DHCP server so that you do not need to change the IP address of the camera.

Note: If you assign the camera a Static IP address prior to DHCP being enabled, the camera first reboots for approximately 30 seconds and then remains accessible at its Static IP until it connects to a DHCP server.

- Connect to a PC directly: Directly connect the camera to a PC using a standard Ethernet cable. This requires POE switch or injector.
- Connecting a camera to a Local Area Network (LAN): To add the camera to an existing LAN, connect the camera to the POE hub or switch on your network.

Figure 16 Network connection diagram



Default camera settings

The following table describes the default camera settings.

Network Settings	Defaults
DHCP	Enabled
Static IP Address	192.168.1.168
Default Username	admin
Default Password	admin

Note: At first login the user is prompted to change the default username and password.

Procedure 5 Connecting from a computer

Step	Action
1	Ensure the camera and your computer are in the same subnet.
2	Check whether if the network is available between the unit and the computer by pinging the default IP address. <ol style="list-style-type: none"> a Start a command prompt. b Type "Ping 192.168.1.168". If the message "Reply from..." appears, it means the connection is available.
3	Start Internet Explorer and enter IP address: 192.168.1.168. A login window appears. In the window, enter the default user name: admin and password: admin to log in.

- End -

DHCP

On initial camera startup, and after a hardware factory reset, Dynamic Host Configuration Protocol (DHCP) is enabled by default and remains enabled until the camera receives either a DHCP address or is assigned a Static IP address.

Procedure 6 Enable DHCP

Step	Action
1	Select Setup on the Web User Interface banner to display the setup menus.
2	Select the TCP/IP tab in the Basic Configuration menu.
3	Select the Enable DHCP check box to enable DHCP and disable manual settings.
4	Select Apply to save the settings.

The camera searches for a DHCP server. If one is found it connects to that server. If no connection is made to a DHCP server within two minutes, the camera goes to the default IP address 192.168.1.168, but continues to search for a DHCP address.

Note: If you assign the camera a Static IP address prior to DHCP being enabled, the camera first reboots for approximately 30 seconds and then remains accessible at its Static IP until it connects to a DHCP server.

- End -

Procedure 7 Disable DHCP

Step	Action
1	Select Setup on the Web User Interface banner to display the setup menus.
2	Select the TCP/IP tab in the Basic Configuration menu.
3	Clear the Enable DHCP check box to disable DHCP and allow manual settings to be entered. The default setting is 'Enabled'.
4	If Enable DHCP has been disabled:

- a Enter the IPv4 Address in the **IPv4 Address** text box in the form xxx.xxx.xxx.xxx. The default setting is '192.168.1.168'
 - b Enter the Network Mask in the **Network Mask** text box xxx.xxx.xxx.xxx. The default setting is '255.255.255.0'
 - c Enter the Gateway IP address in **Gateway** text box xxx.xxx.xxx.xxx.
 - d Enter the Primary DNS Server in the **Primary DNS Server** text box xxx.xxx.xxx.xxx.
- 5 Select **Apply** to save the settings.

- End -

Managing cameras with the Illustra Connect tool

In addition to using the IE browser to access your camera, you can alternatively use the provided tool, Illustra Connect.

Illustra Connect is a management tool designed to manage your network cameras on the LAN. It can:

- help you find multiple network cameras
- set the IP addresses
- show connection status
- manage firmware upgrades
- bulk configuration

Procedure 8 Connecting to the camera using Illustra Connect

Note:

Illustra Connect can only discover devices on the same subnet as its host computer. Therefore, the camera and the computer being used to configure it must be on the same subnet.

Step	Action
------	--------

- | | |
|---|---|
| 1 | Using a computer which is connected to the same network and subnet, install the Illustra Connect software.

The Illustra Connect software and the Illustra Connect manual are available to download on www.illustracameras.com |
| 2 | When the installation is complete, run Illustra Connect.

It searches the network and displays all compliant devices. |
| 3 | Select the camera you want to configure, locating it by its unique MAC address. |
| 4 | Right-click the camera and select Launch Web GUI Configuration. The camera Web User Interface displays. |

- End -

Procedure 9 Connecting to the camera using the static IP address

Step	Action
1	The camera attempts to obtain an IP Address from the DHCP Server. When no DHCP Server is available the camera is assigned a Static IP address of 192.168.1.168.
2	Open Microsoft Internet Explorer and enter the URL of the camera as 192.168.1.168. The camera sign in page displays.

Note:

The computer you use to configure the camera must have an IP address on the same subnet.

- End -

Procedure 10 Logging on to the camera web user interface

Step	Action
1	When you select the camera, the sign in page displays. Select your preferred language from the drop-down menu.
2	Enter the username in the Username text box. The default username is admin.
3	Enter the password in the Password text box. The default password is admin.
4	Select Log in .

Note: The first time that you access the camera or after a factory reset the following two pop up windows are visible: A pop up window that requests the user to **Define a Host ID** and a pop up window that requests the user to select a **Security Type**. Please refer to the user manual for further information on this.

5 The Live view page is visible. This displays the current view of the camera.

Note:

At first login the user is prompted to change the default username and password.

- End -

Procedure 11 Enabling the correct video orientation for a wall mounted camera

Step	Action
1	Log on to the camera web user interface.
2	Select Setup on the camera web user interface banner to display the setup menus.
3	Select the Picture Basic tab from the Basic Configuration menu.
4	Select the required Orientation setting: <ul style="list-style-type: none">• Mirror• Flip
5	The video pane updates to display the new settings.

- End -

Network Topology

The Illustra Flex cameras deliver video images and audio in real-time using the Internet and Intranet. It is equipped with an Ethernet RJ-45 network interface.

The following images illustrate the network topology of the cameras.

Figure 17 Illustra Flex Bullet Camera Network Topology Type I

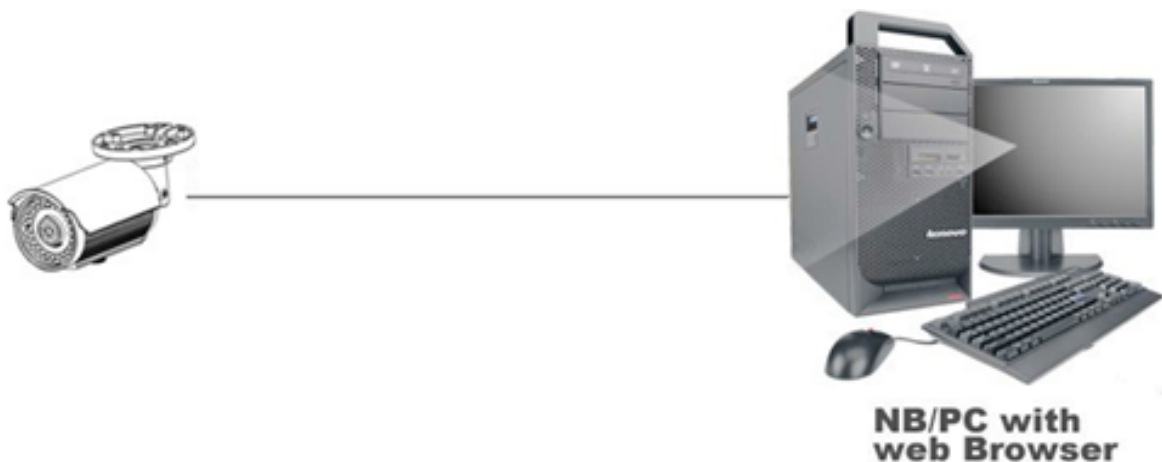
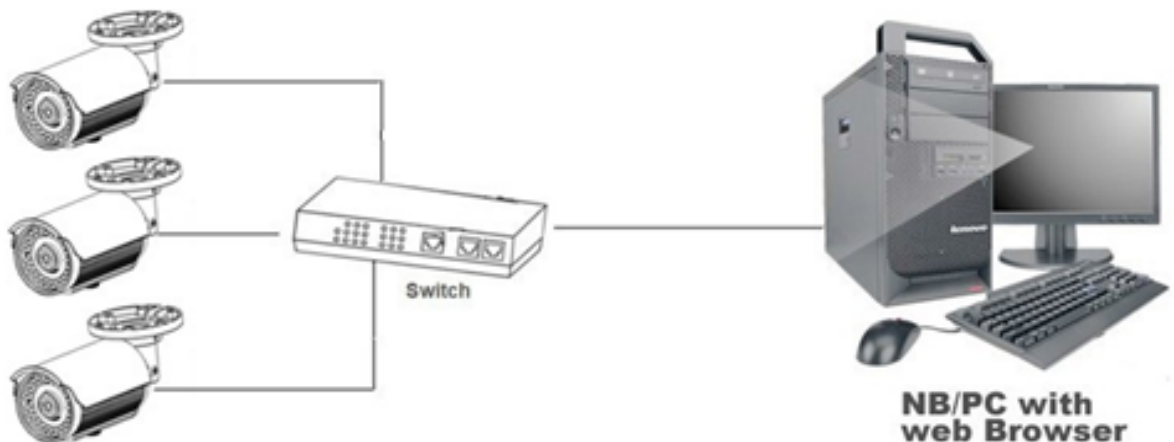


Figure 18 Illustra Flex Bullet Camera Network Topology Type II



Appendix A: Technical Specifications

The table below lists technical specifications of the Illustra Flex Outdoor Bullet cameras.

General Features	
Model Type	Illustra Flex Outdoor Bullet Camera
Model No.	IFS03B1BNWIT / IFS08B2ONWIT / IFS03B1ONWIT / IFS03B1ONWITA / IFS08B2ONWITA
Camera Body Color	White
Vandal Resistant Rating	3MP (IFS03B1BNWIT) = IK7 3MP (IFS03B1ONWIT) = IK10 3MP (IFS03B1ONWITA) = IK10 8MP (IFS08B2ONWIT) = IK9 8MP (IFS08B2ONWITA) = IK10
Mechanical Features	
Dimensions	3MP (IK7) = Ø70 x 223 mm 3MP (IK10) and 8MP (IK9 & IK10) = Ø77.5 x 235 mm
Weight	approximately 1.1kg
Pan Rotation Angle	360°
Tilt Angle	90°
Z-axis Rotation	360°
Housing Material	Aluminum Alloy
Other Housing Material	PC
Video Processor	
ROM/Flash Size	256 Mbytes
RAM Size	512 Mbytes
RTC Hold Up Time	24 hours
Image Sensor	
Format	3MP (IK7 & IK10) = 1/2.8 CMOS 8MP (IK9 & IK10) = 1/2.5"
Capture Method	Rolling
Scan Method	Progressive
Lens	
Design Type	3MP (IK7 & IK10) = Varifocal 6 groups 8 elements 8MP (IK9 & IK10) = 6 groups 10 elements
Mount	Phi 14mm

Aperture Range	3MP (IK7 & IK10) = F/1.4(W) ~ F/2.7(T) 8MP (IK9 & IK10) = F/1.5(W) ~ F/2.91(T)
Focal Length Range	3MP (IK7 & IK10) = 2.8-12 mm 8MP (IK9 & IK10) = 3.4-9 mm
Focal Means	Motorized
Focal Type	Varifocal
Focus Type	Motorized
Auto Focus	One-Touch
IR Correction	Optical corrected
Day/Night	True D/N with ICR
Horizontal Angle of View	3MP (IK7 & IK10) = 98° (Wide); 35° (Tele) 8MP (IK9 & IK10) = 104° (Wide); 42° (Tele)
Vertical Angle of View	3MP (IK7 & IK10) = 71° (Wide); 26° (Tele) 8MP (IK9 & IK10) = 56° (Wide); 24° (Tele)
Format	3MP (IK7 & IK10) = 1/2.7" 8MP (IK9 & IK10) = 1/2.5"
Illuminator	
Wavelength	850nm
IR Distance	25m
Smart IR	Yes. When Smart IR is ON, AE luma target will be reduced slightly and applies some dWDR.
Adaptive IR	Yes. Adaptive IR refers to lens position to adjust the IR intensity of both narrow and broad IR LEDs to have better exposure balance.
Number of IR LED devices	14 PCS
Power Supply	
Power Requirement	AC 24V, PoE IEEE 802.3af class 3
Current Draw Amps	0.66mA
Wattage	11.52W
Line Frequency Range	47 to 63 Hz
Video Codecs	
Frame Rate Range	1 to 60 ips
Maximum Resolution and Rate	IFS03B1BNWIT - 2048x1536 @ 30 ips IFS03B1ONWIT - 2048x1536 @ 30 ips IFS03B1ONWITA - 2048x1536 @ 30 ips IFS08B2ONWIT - 3840x2160 @ 15 ips IFS08B2ONWITA - 3840x2160 @ 15 ips
Video Codecs	H.264, H.264 Intellizip , H.265, H.265 Intellizip, MJPEG

Video Imaging	
Dynamic Range Method	3MP includes WDR, TrueWDR, TWDR3x 8MP does not include TWDR3x
Noise Reduction	2D and 3D NR
Audio	
Sampling Bits	16-BIT
Input Type	SE/Line/MIC
Input Impedance	20K/Attenuation = 0 dB
Maximum Input Level	2Vp-p
Input connector	Terminal Block
Output Type Impedance	Hi impedance
Maximum Output	2Vp-p
I/O Interfaces	
SD Card	SDXC slot up to 128GB
Alarm Inputs	1
Auxiliary Outputs	1
Video Output	Yes, PAL and NTSC
IP Connector	RJ-45 IP66/IP67 pigtail
LED Indicators	Network, Green LED
Reset Buttons	Reboot and Return to Defaults
Environmental	
Operating Temperature Range	-40° ~ +50°C
Start-up Temperature Range	-40° ~ +50°C
Water/Dust Intrusion	IP66/IP67/IP68
Client Interfaces	
Browsers supported	IE 9 or above, Firefox, Safari, Chrome
Networking	
Languages supported	English (default), Arabic, Czech, Danish, German, Spanish, French, Hungarian, Italian, Korean, Japanese, Netherlands, Polish, Portuguese, Swedish, Turkish, Chinese Traditional, Chinese Simplified, Russian.
Ethernet	10/100Base-T
Supported Protocols	TCP/IP, IPv4, IPv6, TCP, UDP, HTTP, FTP, DHCP, WS-Discovery, DNS, DDNS, RTP, TLS, Unicast, Multicast, NTP, SMTP, WSSecurity,

	IEEE 802.1x, PEAP, SSH, HTTPS, SSL, SOAP, WSAddressing, CIFS, SNMP, UPnP, RTSP, LLDP
Base Protocol	TCP/IP - RFC4614
Internet Layer Addressing	IPv4 - RFC791 IPv6 - RFC2460
Transport Layer	TCP - RFC973 UDP - RFC768
Data Transmission	HTTP/HTTPS - RFC2616 FTP - RFC959 SFTP
Network Address Configuration	DHCP - RFC2131 Zeroconf - RFC3927 Static IP address LLDP
Time Synchronization	NTP - RFC1305 IETF NTP Working Group i minute poll rate
E-mail	SMTP - RFC5321 Authenticated SMTP - RFC4954
Authentication and Security	IEEE.802.1x - TLS/PEAP HTTPS (HTTP over TLS) - RFC2818 WS-Security Multi-level password protection IP address filtering HTTPS encryption User access log
Streaming	RTP - RFC3550 RTSP - RFC2326 Unicast Streaming Multicast RFC 1112 level 1
Firmware Upgrade	Browser/illustra Connect/ONVIF

Appendix B: Stream Resolutions

Flex Gen 2 3MP and Flex 8MP Streaming Combinations

Table 19 on page 20 and Table 20 on page 21 provide information for the stream resolutions and supported FPS of the Flex Gen 2 3MP cameras herein. Table 21 on page 22 provides information for the stream resolutions and supported FPS of the Flex 8MP cameras.

Table 19 Stream Set A (all resolution, codes and frame rate combinations of Stream 1, 2 and 3 are valid)

Flex 3MP Bullet camera resolutions									
Stream Resolution	Codecs	Frame Rates (fps)	Stream Resolution	Codecs	Frame Rates (fps)	Stream Resolution	Codecs	Frame Rates (fps)	TWDR Support
Stream 1			Stream 2			Stream 3			
2048x1536	H264/H264 IntelliZip H265/H265 IntelliZip	1-30	1280x720	H264/H264 IntelliZip H265/H265 IntelliZip MJPEG	1-30	640x360	MJPEG	7-15	Yes (2x)
1920x1080	H264/H264 IntelliZip H265/H265 IntelliZip MJPEG	1-30	1024x576	H264/H264 IntelliZip H265/H265 IntelliZip MJPEG	1-30	480x360	MJPEG	7-15	Yes (2x)
1664x936	H264/H264 IntelliZip H265/H265 IntelliZip MJPEG	1-30	640x360	H264/H264 IntelliZip H265/H265 IntelliZip MJPEG	1-30	384x288	MJPEG	7-15	Yes (2x)
1280x720	H264/H264 IntelliZip H265/H265 IntelliZip MJPEG	1-30	480x360	H264/H264 IntelliZip H265/H265 IntelliZip MJPEG	1-30				Yes (2x)
			384x288	H264/H264 IntelliZip H265/H265 IntelliZip MJPEG	1-30				Yes (2x)

Table 20 Stream Set B (all resolution, codes and frame rate combinations of Stream 1, 2 and 3 are valid)

Stream Resolution	Codecs	Frame Rates (fps)	Stream Resolution	Codecs	Frame Rates (fps)	Stream Resolution	Codecs	Frame Rates (fps)	TWDR Support
Stream 1			Stream 2			Stream 3			
1920x1080	H264/H264 IntelliZip H265/H26 IntelliZip MJPEG	31-60	1280x720	H264/H264 IntelliZip H265/H26 IntelliZip MJPEG	1-15	640x360	MJPEG	7-15	No
1664x936	H264/H264 IntelliZip H265/H26 IntelliZip MJPEG	31-60	1024x576	H264/H264 IntelliZip H265/H26 IntelliZip MJPEG	1-15	480x360	MJPEG	7-15	No
1280x720	H264/H264 IntelliZip H265/H26 IntelliZip MJPEG	31-60	640x360	H264/H264 IntelliZip H265/H26 IntelliZip MJPEG	1-15	384x288	MJPEG	7-15	No
			480x360	H264/H264 IntelliZip H265/H26 IntelliZip MJPEG	1-15				No
			384x288	H264/H264 IntelliZip H265/H26 IntelliZip MJPEG	1-15				No

Note:A maximum of 5 concurrent streams are supported by the camera. This includes shared streams. So, for example, Stream 1 can be shared twice along with a running Stream 2 and Stream 3, or Stream 1 can be shared 4 times if Stream 2 and Stream 3 are not running.

Note:When frame-rate is more than 30fps the following restrictions apply:

- Stream 1 max resolution is 1920x1080.
- TWDR is disabled.
- Stream 2 has a maximum frame-rate of 15.

Table 21 Flex 8MP Bullet Camera resolutions

Flex 8MP Bullet camera resolutions					
Stream 1	FPS	Stream 2	FPS	Stream 3	FPS
(3840x2160) 4K 16:9	1-15	(1280x720) 720p	1-15 or 1-30	(640x360) nHD 16:9	7-15
(3264x1840) 16:9		(1024x576) PAL+ 16:9		(480x360) 480 4:3	
(2592x1944) 4:3		(640x360) nHD 16:9		(384x288) 4:3	
(2688x1520) 16:9		(480x360) 480 4:3			
(2048x1536) QXGA 4:3		(384x288) 4:3			
(1920x1080) 1080p 16:9	1-60				
(1280x960) SXGA 16:9					
(1280x720) 720p 16:9					

Note:Stream 2 is limited to a maximum of 15 FPS when: Stream 1 is set to **2048x1536** or above. Stream 1 is set to **1920x1080** or above with FPS greater than 30.

Note:Stream 2 automatically reconfigures to a maximum of 15 FPS if Stream 1 FPS is 30 or greater.

Note:Stream 2 supports 1-30 FPS when Stream 1 is set to 1920x1080 or below with FPS set to a maximum of 30.

Note:Codec MJPEG is not supported when the resolution is equal to or greater than 2048x1536.

Note:TrueWDR 2x. When TrueWDR2x is switch on, the following limits apply: For 2048x1536 and above, the framerate is limited to 15FPS (as it is when TrueWDR is off). For 1920x1080 and below, the framerate is limited to 30FPS.

Note:TrueWDR 3x is not available on 8MP units.
