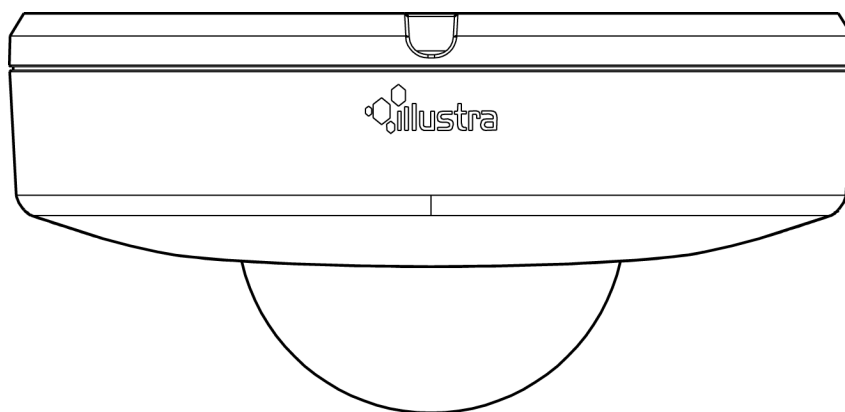# illustra

From Tyco Security Products

Illustra Pro 2MP and 3MP Compact Camera

Quick Start Guide

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.

Copyright

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Trademarks

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Warning

- These units operate at 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 avoid damage to the unit, never connect more than one type of power supply (PoE IEEE802.3 Ethernet Class 0) at the same time. If using PoE, this camera is to be connecting only to PoE networks without routing to heterogeneous devices.

- The camera is not intended to be directly connected to an external network and the video coax connections should only be connected intra-building.

- 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 melt or lens to be fogged.

- Avoid aligning the lens to very bright objects (for 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, 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:

        - Indoor Minidome: -20˚C to 50˚C (-4˚F to 122˚F)

        - Outdoor Minidome: -50˚C to 50˚C (-58˚F to 122˚F)

        - Bullet: -40˚C to 50˚C (-40˚F to 122˚F)

        - Box: -20˚C to 50˚C (-4˚F to 122˚F)

        - Pro Compact : -40˚C to 50˚C (-40˚F to 122˚F)

    - Power over Ethernet (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 Pro 2MP and 3MP Compact Cameras

This chapter provides product features, installation procedures, and connection information regarding the Illustra Pro 2MP and 3MP Compact 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 Ilustra Pro 2MP and 3MP Compact cameras. Product code and description of the camera is provided in Table 1 on page 1.

Table 1 Product code and description of the Compact camera

Product Code	Description
IPS02CFOCWST	Illustra Pro 2MP Compact Dome, 2.8mm, vandal, clear, white, SDN, TWDR
IPS03CFOCWST	Illustra Pro 3MP Compact Dome, 2.8mm, vandal, clear, white, SDN, TWDR

Figure 2 Physical dimensions of the Compact cameras (mm)
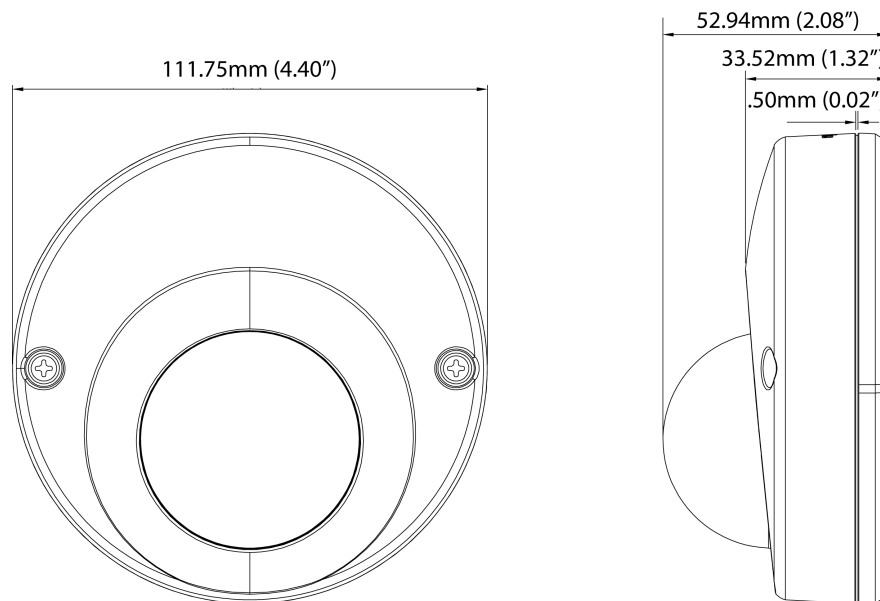
Figure 3 Physical dimensions of the Compact cameras (mm)
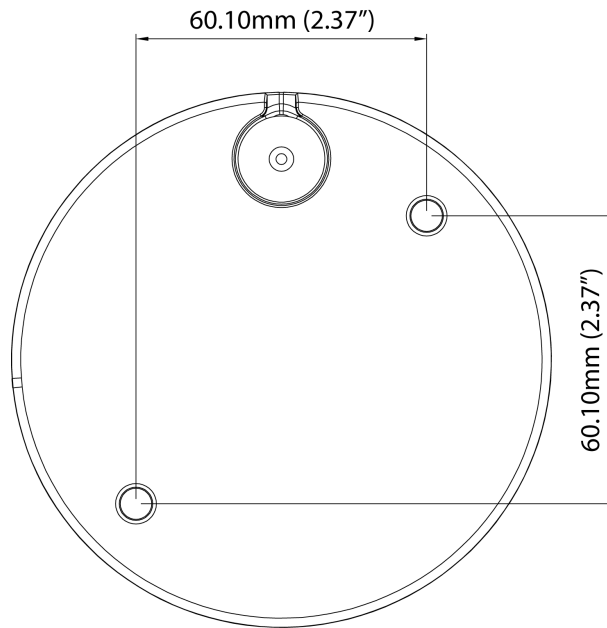
Figure 4 Pictorial index of the Compact cameras
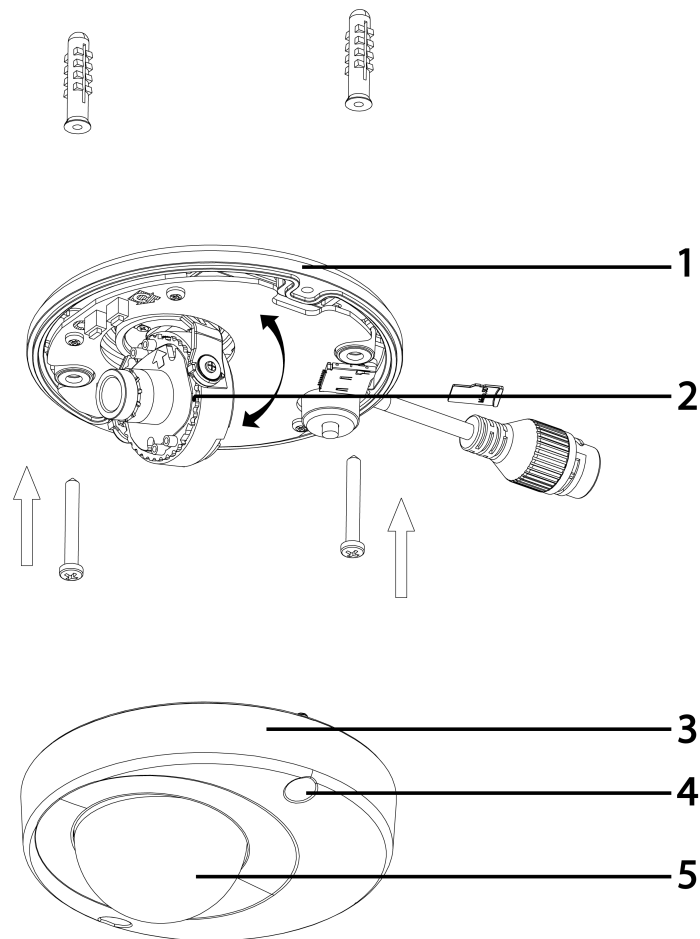
Table 5 Pictorial index descriptions

Index number	Description
1	Camera base
2	Lens Unit
3	Camera top case
4	Screw casing (Loosen the screws to take off the top cover)
5	Dome cover

Figure 6 Interior view and buttons of the unit

Table 7 Interior button descriptions

Interior button	Description
	Resets to factory default by pressing and holding the button for five seconds.
	Reboots the unit.

Note: The connector cable of the Compact camera should be contained in a conduit suitable for outdoor use.
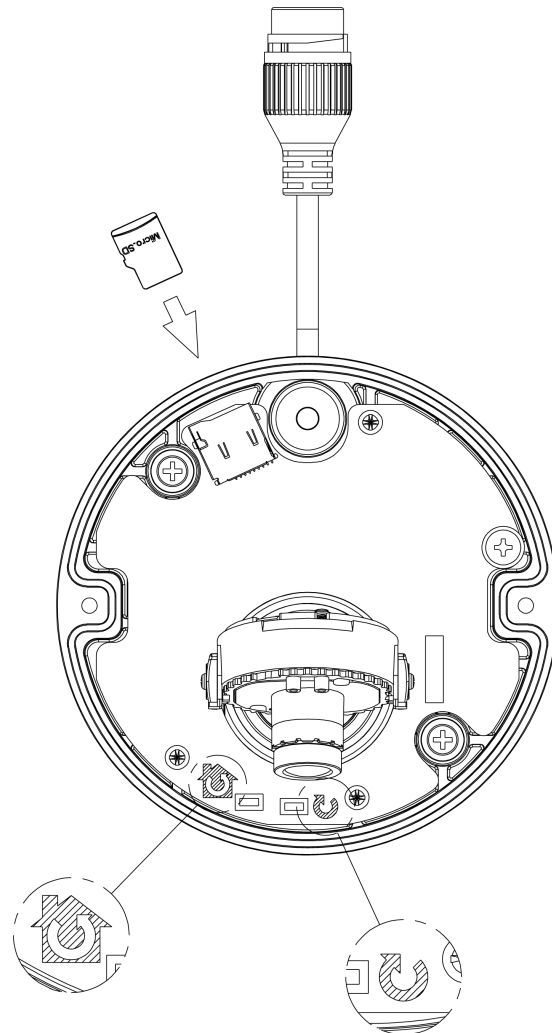
Note: Connectors and field wiring terminals for external Class 2 circuits provided with marking indicating minimum Class of wiring to be used. Class 2 shall be marked adjacent to the field wiring terminals.

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.

- 2 Plastic Anchors and screws 35mm
- 1 T20 Security Torx Wrench
- 1 Installation template sticker
- 1 printed Quick Start Guide
- 1 printed Regulatory document
- 1 Desiccant bag

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 4.

Procedure 1 Disassembling the Camera

Step	Action
1	Remove the bungs from the camera base and remove the screws from the top of the camera with a safety screwdriver (4).
2	Gently remove the top cover (3).
3	Set the top cover aside.

Note: Unscrew the top cover safety wire to fully remove the top cover.

Figure 8 Disassembling the Compact camera
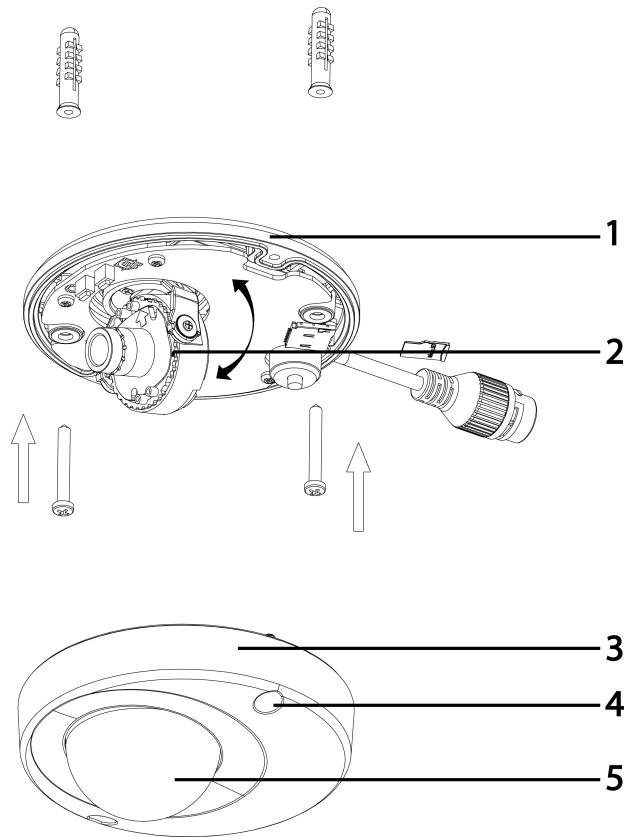
- End -

Procedure 2 Mounting the camera

Step	Action
1	Use the mounting template to mark holes that correspond to the camera base on the mounting surface.
2	Drill holes.
3	Fasten the anchors to the mounting surface with screws.
4	Secure the unit bottom case to the wall or ceiling with tapping screws.
5	Adjust the viewing angle.

6   Ensure that the top cover safety wire is connected and securely fit the top cover.

Figure 9 Mounting the camera

WARNING	Depending on the material of your mounting surface, you may require different screws and anchors than those as supplied. To prevent the unit from falling off, ensure that it is secured to a firm place (ceiling slab or channel) with the safety wire (supplied) strong enough to sustain the total weight of the unit. Pay also attention to the finishing at the end of the wire. Never turn the lens more than 360°, which should disconnect or break internal cables.

CAUTION	Ensure that the Safety wire is connected with one end to the ceiling and the other to the safety-cord screw of the unit.

- End -

Procedure 3 Adjusting the Position

The unit has three axes for positioning, refer to Figure 10 on page 7. While monitoring, adjust the position as below.

Step	Action
1	Pan Adjustment (A) For Wall Mount and Tilted Ceilings:
	a Rotate the lens base (maximum 140°) until you are satisfied with the field of view.
2	Horizontal Rotation (B):
	a Rotate 3D assembly in the base. Do not turn assembly more than 354° as this assembly may cause the internal cables to twist and disconnect or break.
3	Tilt Adjustment (C):
	a Tilt the lens base (maximum 125° from the frontal mounting surface) until you are satisfied with the field of view.

CAUTION	Limitation of three axis positions of lens centroid: • Pan range: 140° • Tilt range: 15° to 125° from frontal mounting surface • Rotate (z-axis): 354°

Figure 10 Adjusting the position of the camera
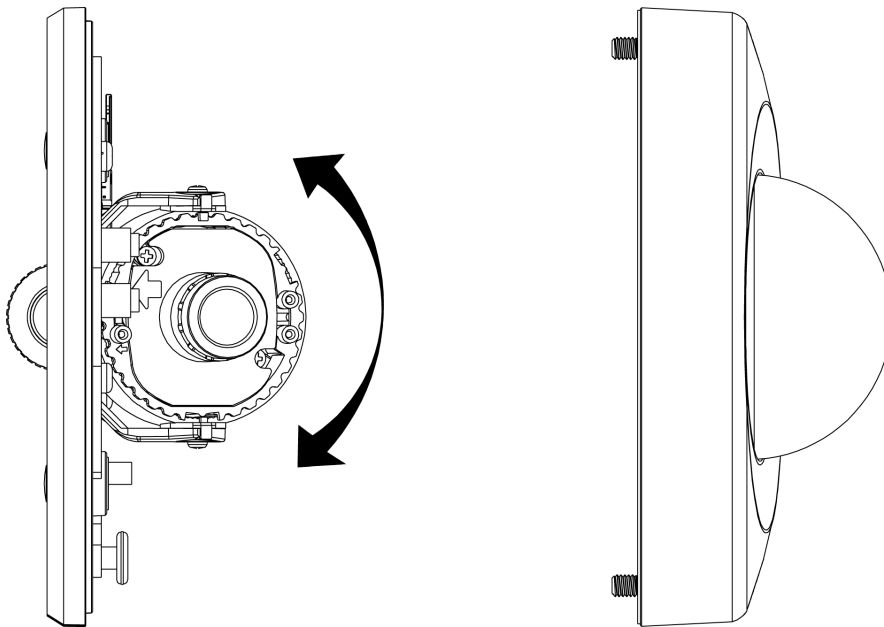
Figure 11 Adjusting the position of the camera
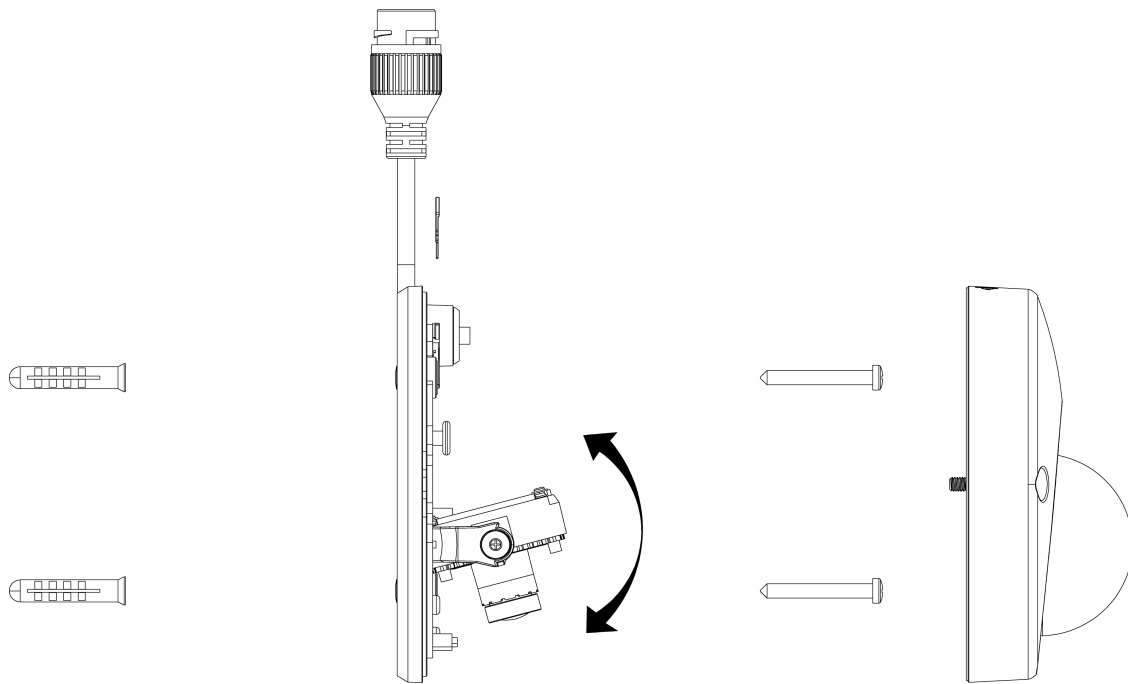
NOTE	For Compact camera series: The zoom level and focus are manually set in the factory.

- End -

Procedure 4 Installing the desiccant

Step	Action

1   Remove the papers from the back of the desiccant.

2   Attach to the interior side of the camera cover as seen in the image below.

Figure 12 Location for desiccant application
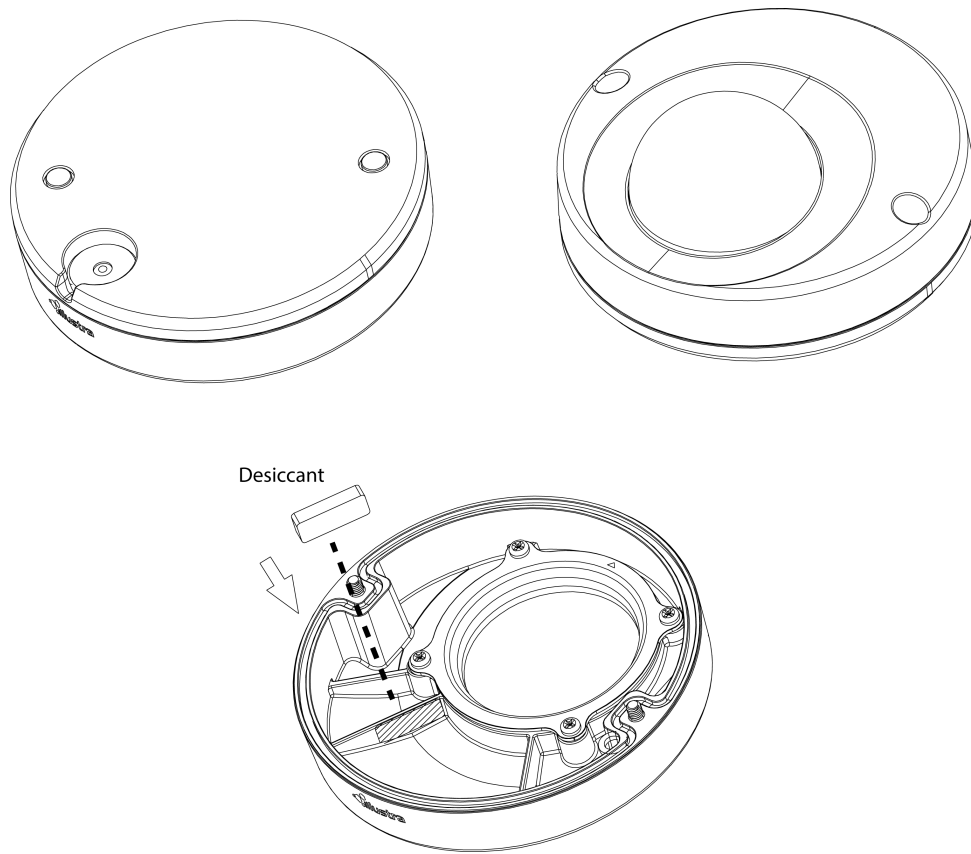
- End -

Procedure 5 Locking the Camera

Step	Action
1	Use a soft, lint-free cloth to wipe the dome cover and remove fingerprints.
2	Ensure that the top cover safety wire is connected and attach the inner liner and top cover.

- End -

Procedure 6 Powering up the camera

Connect the power cable to the power plugs as followings:

- PoE: Connect the RJ-45 jack to a PoE compatible network device that supplies power through the Ethernet cable.

Note: 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 -

System Requirements

The below table lists the minimum requirements to implement and operate Illustra Pro 2MP and 3MP Compact cameras.

Table 13 System Requirements

System hardware	
CPU	Intel Pentium 4 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 8 or above, Firefox, Safari, Chrome
Unit	
Power Supply	PoE
Network	
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 2) 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 14 Network connection diagram
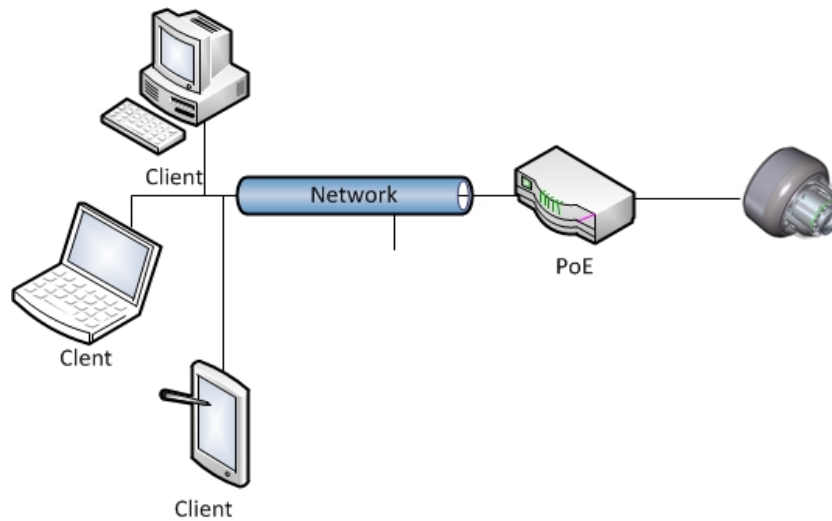
Default camera settings

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 7 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.

     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 8 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 9 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 10 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 11 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 12 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.

Step	Action
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 13 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: • **Mirror** • **Flip**
5	The video pane updates to display the new settings.

- End -

Procedure 14 Selecting Corridor Mode

This provides a better perspective when viewing a long corridor.

Step	Action
1	Select **Setup** on the GUI banner to display the setup menus.
2	Select the **Picture Basic** tab from the **Basic Configuration** menu.
3	Select **Play** to start the video stream if it is not already active.
4	Select the required **Corridor Mode** setting:

- None

- -90°

- +90°

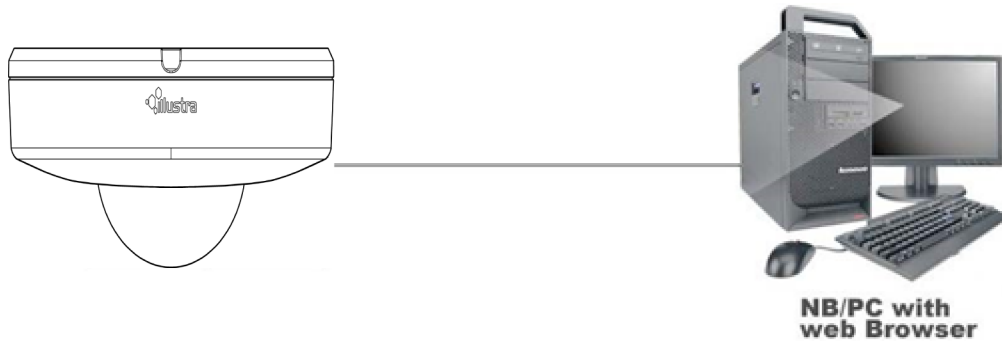| Step	Action
5	The video pane updates to display the new settings.

- End -

Network Topology

The Compact camera delivers video images in real-time using the Internet and Intranet. It is equipped with an Ethernet RJ-45 network interface.

The following images illustrate the network topologies of the cameras.

Figure 15 Compact Cameras Network Topology Type I

Figure 16 Compact Cameras Network Topology Type II
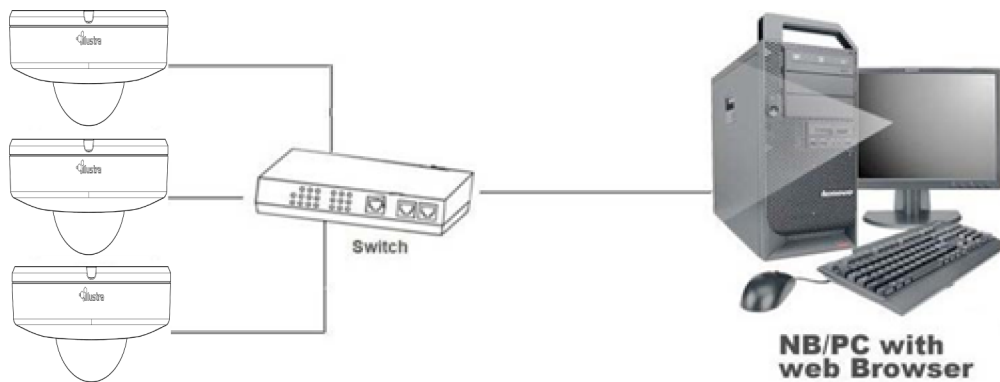
Appendix A: Technical Specifications

The table below lists technical specifications of the Pro 2MP and 3MP Compact cameras.

General Features	
Model Type	2MP Compact Camera / 3MP Compact Camera
Model No.	IPS02CFOCWST / IPS03CFOCWST
Camera Body Color	White
Vandal Resistant Rating	IK10 (Body)
Mechanical Features	
Dimensions	Ø110x52mm
Weight	approx 0.5kg
Pan Rotation Angle	140°
Tilt Angle	15° to 125° from frontal mounting surface
Z-axis Rotation	354°
Housing Material	Aluminum Alloy
Other Housing Material	PC / PC + ABS
Video Processor	
ROM/Flash Size	256 Mbytes
RAM Size	512 Mbytes
RTC Hold Up Time	24 hours
Image Sensor	
Format	1/2.7" CMOS
Capture Method	Rolling
Scan Method	Progressive
Lens	
Design Type	5 groups 6 elements (all glass)
Mount	M12
Aperture Range	F1.85
Focal Length Range	2.8mm
Focal Means	Fixed (factory focused at 5 m for DOF of .7 m to ∞)
Focal Type	Fixed

Focus Type	Factory Focused
Auto Focus	Factory Focused
IR Correction	coated
Day/Night	SDN
Horizontal Angle of View	102°
Vertical Angle of View	77°
Format	136
Illuminator	
Wavelength	N/A
IR Distance	N/A
Smart IR	N/A
Adaptive IR	N/A
Number of IR LED devices	N/A
Power Supply	
Power Requirement	PoE IEEE 802.3af class 2
Current Draw Amps	N/A
Wattage	N/A
Line Frequency Range	N/A
Video Codecs	
Frame Rate Range	1 to 60 ips
Maximum Resolution and Rate	3MP @ 30 ips, 2MP @ 60 ips
Codecs	H264, H264 IntelliZip, H265, H265 IntelliZip, MJPEG
Video Imaging	
Dynamic Range Method	2x True WDR / Digital WDR
Noise Reduction	2D and 3D NR
Corridor Mode	-90° ~ +90°
Audio	
Sampling Bits	None
Input Type	None
Input Impedance	None
Maximum Input Level	None
Input connector	None

Output Type Impedance	None
Maximum Output	None
I/O Interfaces	
SD Card	SDXC slot up to 128GB
Alarm Inputs	N/A
Auxiliary Outputs	N/A
Video Output	No
IP Connector	RJ-45 IP66/IP67 pigtail
LED Indicators	1 x Red LED(on board)
Reset Buttons	Reboot : 1 button Return to defaults : 1 button
Environmental	
Operating Temperature Range	-40° ~ +50°C
Start-up Temperature Range	-40° ~ +50°C
Water/Dust Intrusion	IP66/IP67
Client Interfaces	
Browsers supported	IE 8 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, WS-Security, IEEE 802.1x, PEAP, SSH, HTTPS, SOAP, WSAddressing, CIFS, SNMP, UPNP, SFTP, RTSP, LLDP
Base Protocol	TCP/IP - RFC4614
Internet Layer Addressing	IPv4 - RFC791 IPv6 - RFC2460
Transport Layer	TCP - RFC973 UDP - RFC768
Data Transmission	HTTP- RFC2616 FTP - RFC959 SFTP
Network Address Configuration	DHCP - RFC2131 Zeroconf - RFC3927 Static IP address LLDP

Time Synchronization	NTP - RFC1305 IETF NTP Working Group 1 minute poll rate
E-mail	SMTP - RFC5321 Authenticated SMTP - RFC4954
Authentication and Security	TLS - RFC5246 v1.2, HTTPS (HTTP over TLS) - RFC2818, WS-Security, Multi-level password protection, IP address filtering, HTTPS encryption, User access log, IEEE 802.1x, PEAP
Streaming	RTP - RFC3550, RTCP - RFC3550, RTSP - RFC2326, Unicast Streaming, Multicast Streaming - RFC1112 level 1
Firmware Upgrade	Browser/illustra Connect/ONVIF

Appendix B: Stream Resolutions

Pro 2MP and 3MP Compact camera Streaming Combinations

	Normal Mode		
	Codec: H264 (w/IntelliZip), H265 (w/IntelliZip), MJPEG		
	Resolution	Max FPS with TWDR Off	Max FPS with TWDR 2x	Max FPS with TWDR 3x
Stream 1 **Note:**2048x1536 is only supported on the 3MP model	2048 x 1536 / QXGA / 4:3	30	30	20
	1920 x 1080 / 1080p / 16:9	60	30	20
	1664 x 936 / 16:9	60	30	20
	1280 x 720p / 16:9	60	30	20
Stream 2	1280 x 720 / 720p / 16:9	30 *1	30	20
	1024 x 576 / PAL+ / 16:9	30 *1	30	20
	640 x 360 / nHD / 16:9	30 *1	30	20
	480 x 360 / 480p / 4:3	30 *1	30	20
	384 x 288 / 4:3	30 *1	30	20
Stream 3	640 x 360 /nHD / 16:9	15 *2	15 *2	15 *2
	480 x 360 / 480p / 4:3	15 *2	15 *2	15 *2
	384 x 288 / 4:3	15 *2	15 *2	15 *2

	Corridor Mode		
	Codec: H264 (w/IntelliZip), H265 (w/IntelliZip), MJPEG		
	Resolution	Max FPS with TWDR Off	Max FPS with TWDR 2x	Max FPS with TWDR 3x
Stream 1 **Note:** 1536x2048 is only supported on the 3MP mode	1536 x 2048 / QXGA / 3:4	30	30	20
	1088 x 1920 / 1080p / 9:16	30	30	20
	944 x 1664 / 9:16	30	30	20
	720 x 1280 / 720p / 9:16	30	30	20
Stream 2	720 x 1280 / 720p / 9:16	30	15	15
	576 x 1024 / PAL+ / 9:16	30	15	15
	368 x 640 / nHD / 9:16	30	15	15
	368 x 480 / 480p / 3:4	30	15	15
	288 x 384 / 3:4	30	15	15
Stream 3	368 x 640 / nHD / 9:16	15 *2	15 *2	15 *2
	368 x 480 / 480 / 3:4	15 *2	15 *2	15 *2
	288 x 384 / 3:4	15 *2	15 *2	15 *2

Note:*1 - Stream 2 is restricted to 15 FPS when Stream 1 is greater than 30 FPS.

Note:*2 - Stream 3 is restricted to MJPEG only.

Note:*3 - Only 3MP models can support 1546x2048 (QXGA) 3:4 or 1536x2048 (QXGA) 3:4, and is not available in MJPEG.

Note: Maximum of 5 concurrent streams are supported by each camera, this includes shared streams.(Example: Stream 1 can be shared twice along with a running Stream 2 and Stream 3, or Stream 1 can be shared four times if Stream 2 and Stream 3 are not running.