Outdoor Mini Dome

Hardware Manual

A88, A92, A94, A96

Ver. 2019/07/08

ACTi
Connecting Vision

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Precautions

Read these instructions

Read all the safety and operating instructions before using this product.

Heed all warnings

Adhere to all the warnings on the product and in the instruction manual. Failure to follow the safety instructions given may directly endanger people, cause damage to the system or to other equipment.

Servicing

Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

Trademarks

ACTi and ACTi logo are registered trademarks of ACTi Corporation. All other names and products used in this manual are registered trademarks of their respective companies.

Liability

Every reasonable care has been taken during the writing of this manual. Please inform your local office if you find any inaccuracies or omissions. ACTi will not be held responsible for any typographical or technical errors and reserves the right to make changes to the product and manuals without prior notice.

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the users will be required to correct the interference at their own expense.

European Community Compliance Statement

CE This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to European Standard EN 55022 and EN 55024. In a domestic environment, this product may cause radio interference in which cause the user may be required to take adequate measures.

Safety Instructions

Cleaning

Disconnect this product from the power supply before cleaning.

Accessories and Repair Parts

Use only the accessories and repair parts recommended by the manufacturer. Using other attachments not recommended by the manufacturer may cause hazards.

Installation

Install other devices (such as PoE injector, alarm, etc.) that will be used with the camera in a dry place protected from weather,

Servicing

Do not attempt to service this product yourself. Refer all servicing to qualified service personnel.

Damage Requiring Service

Disconnect this product from the power supply immediately and refer servicing to qualified service personnel under the following conditions.

1) When the power-supply cord or plug is damaged
2) If liquid has been spilled, or objects have fallen into the product.
3) If the inner parts of product have been directly exposed to rain or water.
4) If the product does not operate normally even by following the operating instructions in this manual. Adjust only those controls that are covered by the instruction manual, as improper adjustment of other controls may result in damage, and will often require extensive work by a qualified technician to restore the product to its normal operation.

Safety Check

Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine if the product is in proper operating condition.

Introduction

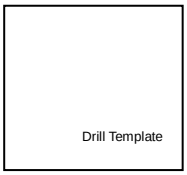
List of Models

This hardware manual contains the following models:

A88		3MP, Outdoor Mini Zoom Dome, Day / Night, Adaptive IR, Advanced WDR, Superior Low Light Sensitivity, 2.85x optical
A92		3MP Outdoor Mini Dome with D/N, Adaptive IR, Advanced WDR, SLLS, Fixed lens
A94		5MP, Outdoor Mini Dome, Day / Night, Adaptive IR, Advanced WDR, Superior Low Light Sensitivity
A96		2MP, Outdoor Mini Dome, Day / Night, Adaptive IR, Basic WDR, Superior Low Light Sensitivity

Package Contents

Check if the camera package comes with the following items:

Camera	Screw Kit	Drill Template
		
Hexagon Wrench	**Cable Gland with Washer (for A88, A94, A96 only)**	**QIG and Warranty Card**
		

IMPORTANT: When the camera is taken out from the box, the lens cover is covered by a thin film. DO NOT remove this film. It is used to protect the lens cover from scratches or fingerprint marks which may happen during installation. Remove this film only after the camera is securely installed and all connections are complete.

Physical Description

A92

Item		Description
1	**Power Input**	Connects to a DC 12V adapter to power up the camera if using a non-Power over Ethernet connection.
2	**Ethernet Port**	Connects to a network using an Ethernet cable.
3	**System LEDs**	Green: Blinks to indicate network activity. Yellow: Lights up to indicate power is on and system is ready.
4	**Memory Card Slot**	Insert a memory card (not included) into the slot for local recording purposes. See ***How to Insert the Memory Card*** on page 24 for more information. **NOTE:** Supports microSDHC and microSDXC cards
5	**Reset Button**	Restores the factory default settings of the camera. To reset the camera, do the following: 1. While the camera power is disconnected, press and hold the **Reset Button** then power up the camera. 2. The **Green LED** starts to blink, continue holding down the **Reset Button** until the **Green LED** goes off and the **Yellow LED** lights on.

A88, A94, A96

Item		Description
1	**Power Input**	Connects to a DC 12V adapter to power up the camera if using a non-Power over Ethernet connection.
2	**Ethernet Port**	Connects to a network using an Ethernet cable.
3	**Memory Card Slot**	Insert a memory card (not included) into the slot for local recording purposes. See ***How to Insert the Memory Card*** on page 24 for more information. **NOTE:** Supports microSDHC and microSDXC cards
4	**Reset Button**	Restores the factory default settings of the camera. To reset the camera, do the following: 1. While the camera power is disconnected, press and hold the **Reset Button** then power up the camera. 2. The **Green LED** starts to blink, continue holding down the **Reset Button** until the **Green LED** goes off and the **Yellow LED** lights on.

Mounting Options

Select the most suitable solution for your installation environment. The camera can be mounted by:

Mount Types	Accessories
Surface Mount	Suitable when mounting the camera directly on walls or ceilings without additional mounting accessories. See ***Installation Procedures*** on page 12 for more information.
Wall Mount	Suitable when mounting the camera on the wall with the camera lens facing down and floor.
Pendant Mount	Suitable when the camera is to be installed on a high ceiling. The pendant mount can lower down the camera installation.
Pole Mount	Suitable when the camera is to be installed on a vertical or horizontal pole.

NOTE:

- For more information about the mounting solutions and accessories, please check the *Mounting Accessory Selector* in our website (http://www.acti.com/mountingselector).
- The above mounting accessories are not included in the package. Contact your sales agents to purchase.

Installation Procedures

This section describes procedures in mounting the camera on a flat surface.

NOTE: The camera and cables images on this documentation are for reference only and may be different from the actual camera.

Step 1: Prepare for Installation

1. Depending on the material of the surface where the camera will be installed, it may be necessary to drill the four (4) screw holes and use the supplied screw tox. Attach the bundled drill template on the surface and drill the screw holes.

2. Determine where the camera cable should go, either through the surface or be routed along the surface.

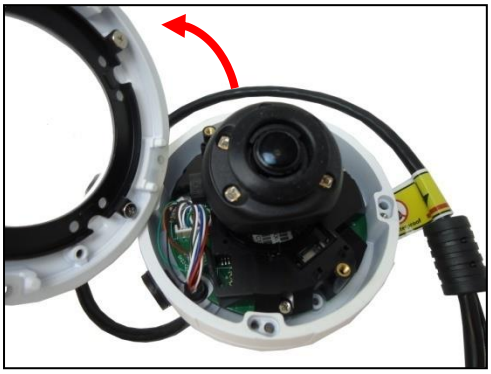
   Depending on where you purchased the camera, the cable may be coming from either the side or the bottom cable hole. If the cable will go through the surface when mounted on the ceiling or wall, the cable should come out from the bottom hole. Move the camera cable if needed. See ***How to Move the Camera Cable*** on page 21 for instructions. Otherwise, skip this step.

   If the cable will go through the surface, drill the cable hole as indicated on the drill template. Otherwise, skip this step.

3. ***If the cable will go through the surface***, drill the cable hole as indicated on the drill template. Otherwise, skip this step.

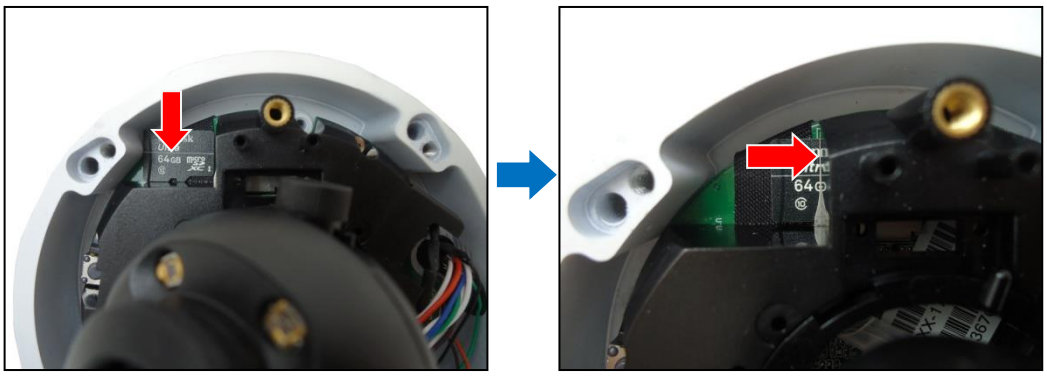
4. Loosen the four (4) screws using the bundled hexagon wrench.

5. Lift to remove the dome cover.



Step 2: Install the Camera

1. If necessary, insert a memory card into the memory card slot of the camera with the metallic contacts of the card facing down the camera. See ***How to Insert the Memory Card*** on page 24 for more information.



2. Install the camera to the surface using the four (4) bundled screws.

NOTE: Please make sure the screws are flat on the plate.

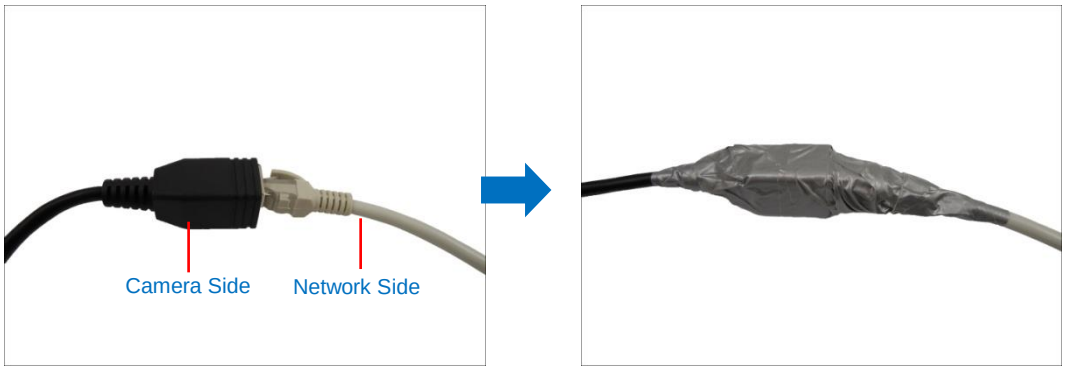
Step 3: Waterproof and Connect the Cable(s)

If using a DC 12V power input to power up the camera, see ***How to Connect a Power Adapter*** on page 24.

Using Waterproof Tape on A92

For A92 cameras, the simplest way to waterproof the connection is by using the waterproof tape.

Connect an Ethernet cable from the network side to the Ethernet port of the camera and wrap the connection with waterproof tape to complete the installation.



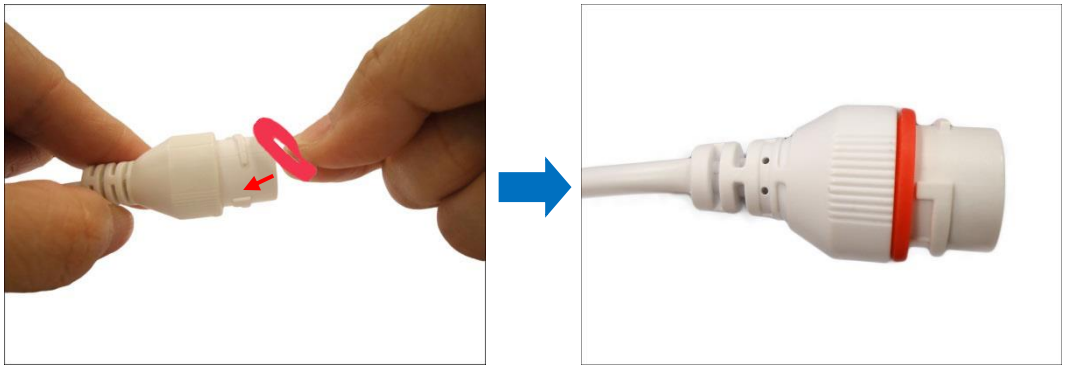
NOTES on using Ethernet cables: For outdoor installations, it is recommended to use *exterior-grade* Ethernet cables (CAT5/CAT5e/CAT6); ordinary Ethernet cables are only designed for indoor use and may deteriorate quickly when exposed to outdoor elements. Exterior-grade Ethernet cables are waterproof and do not require a conduit.

Using the Cable Gland (for A88, A94, A96 only)

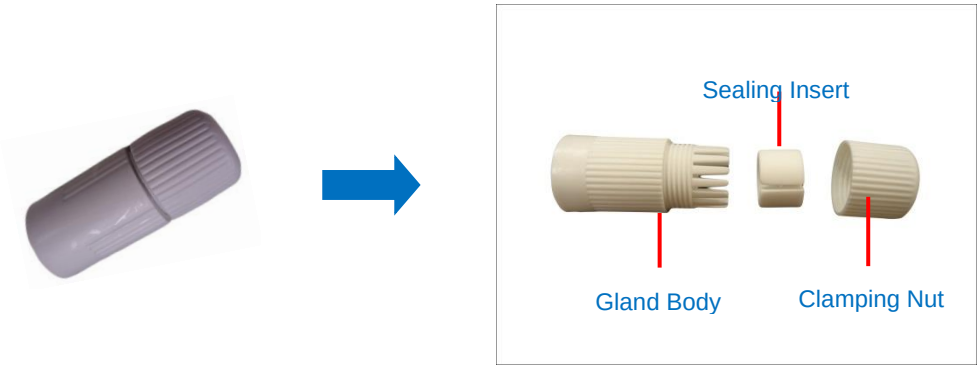
This section describes how to waterproof the cable-out or “pigtail” of the camera using the bundled cable gland. Before connection, prepare an exterior-grade Ethernet cable with RJ-45 connector (without sleeve).

Perform the following to waterproof the “pigtail” using the cable gland:

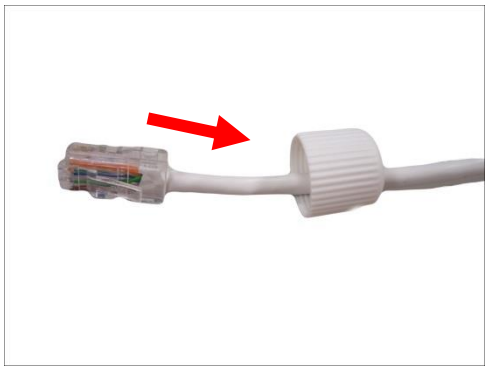
1. Attach the washer to the Ethernet connector of the camera.



2. Detach the clamping nut and sealing insert from the gland body:

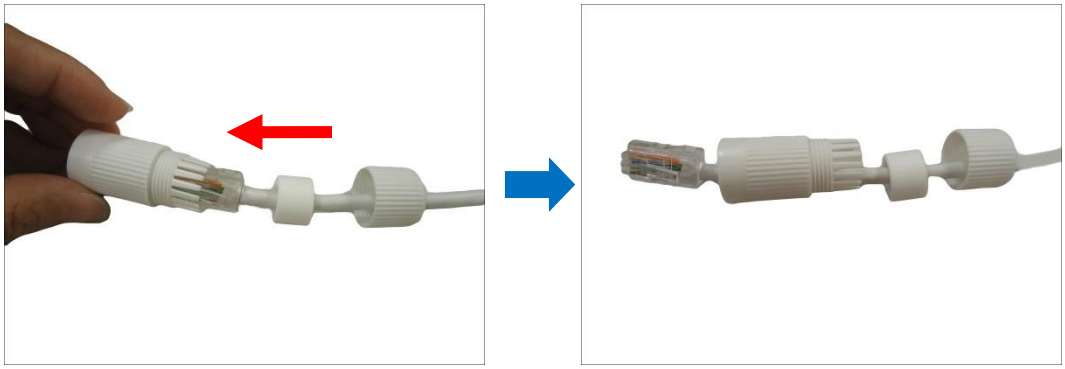


3. Insert the clamping nut into the Ethernet cable.

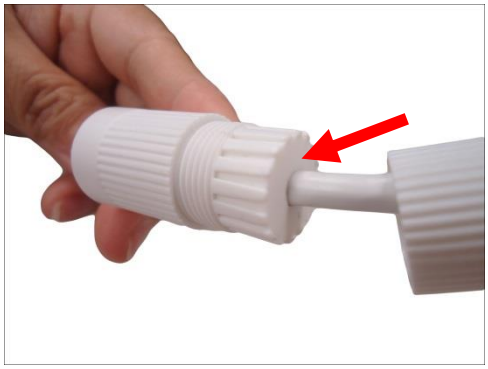


4. Insert the sealing insert through the Ethernet cable.

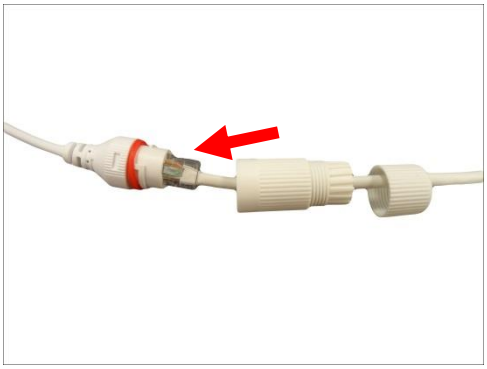
5. Insert the cable through the gland body.



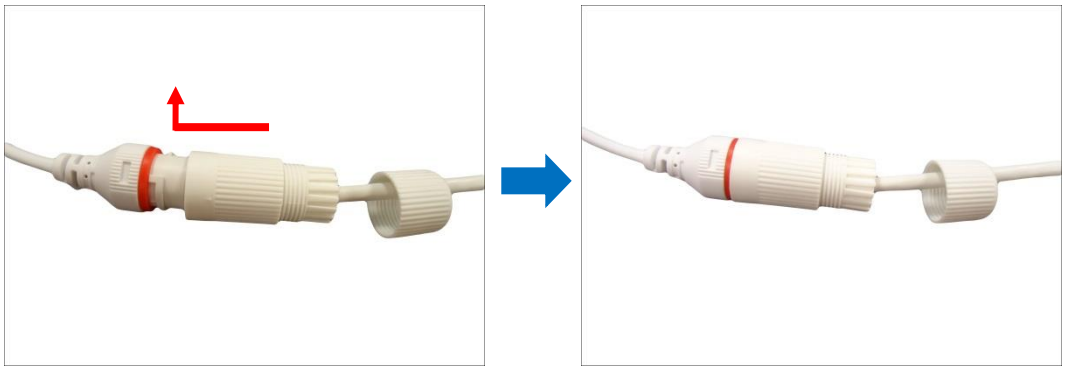
6. Push the sealing insert into the gland body.



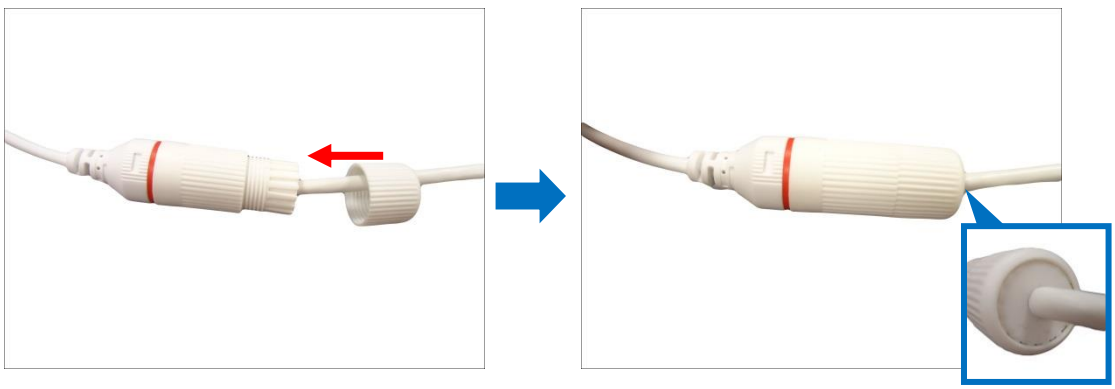
7. Connect the RJ-45 connector to the camera connector.



8. Attach the gland body to the camera connector.



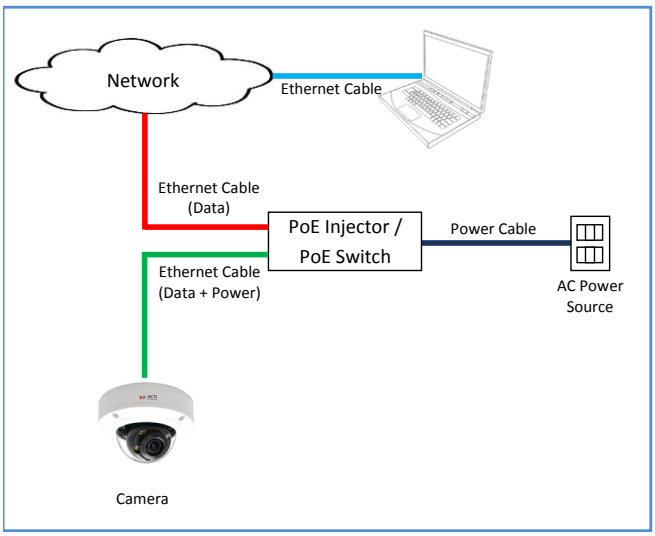
9. Attach the clamping nut to the gland body to complete the cable solution.



NOTE: Make sure the clamping nut is tightly attached to the cable gland body and the sealing insert is squeezed tightly.

Step 4: Connect to Network

Connect the other end of the network cable to a switch or injector. Then, connect the switch or injector to a network or PC and a power source. See Power-over-Ethernet (PoE) example connection diagram below.



NOTE: ***When installing the camera outdoors, make sure to waterproof the cable connection.***

Step 5: Access the Camera Live View

See ***Accessing the Camera*** on page 26 for more information on how to access the Live View of the camera.

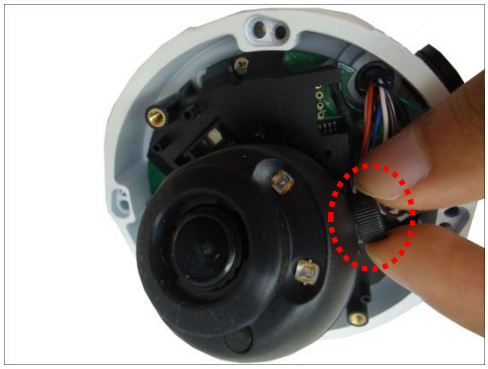
Step 6: Adjust the Viewing Angle

Adjust the camera lens orientation and tilt, as needed.

1. Loosen the tilt adjustment screw, and then tilt the lens module.

2. Rotate the lens module to change the viewing orientation.

3. Tighten the tilt adjustment screw to fix the lens position.



Step 7: Close the Dome Cover

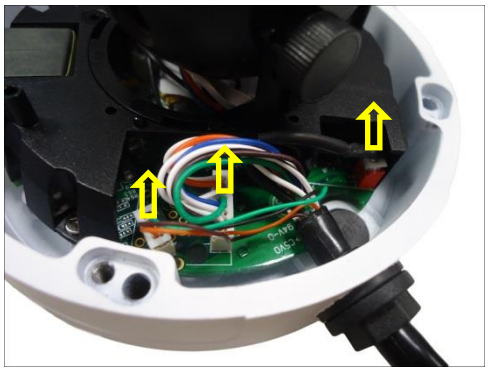
1. Tighten the four (4) screws using the supplied hexagon wrench to attach the dome cover.

Other Installation and Accessories

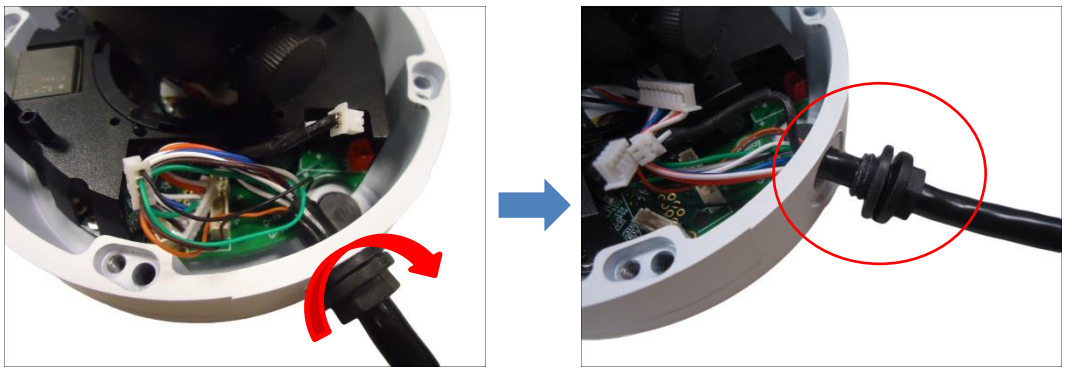
How to Move the Camera Cable Between Cable Holes

Depending on where you purchased the camera, the cable may come out from the side cable hole or bottom cable hole. If there is a need to change the cable to go out from the other hole, follow the procedures below to do so. The illustration below shows the cable coming from the side hole and which will be moved to the bottom hole. Same procedures apply when the cable is coming from the bottom hole to the side hole.

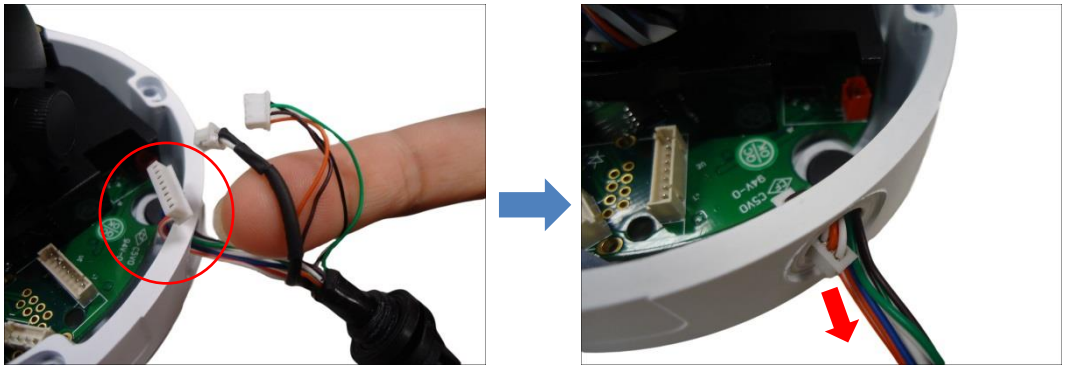
1. Carefully pull the wafer connection from the camera main board. Do not pull through the tiny cables; instead use a tool to detach the wafer head from its connector.



2. Turn the cable gland to loosen it from its thread completely. Be careful not to over twist and entangle the cables.

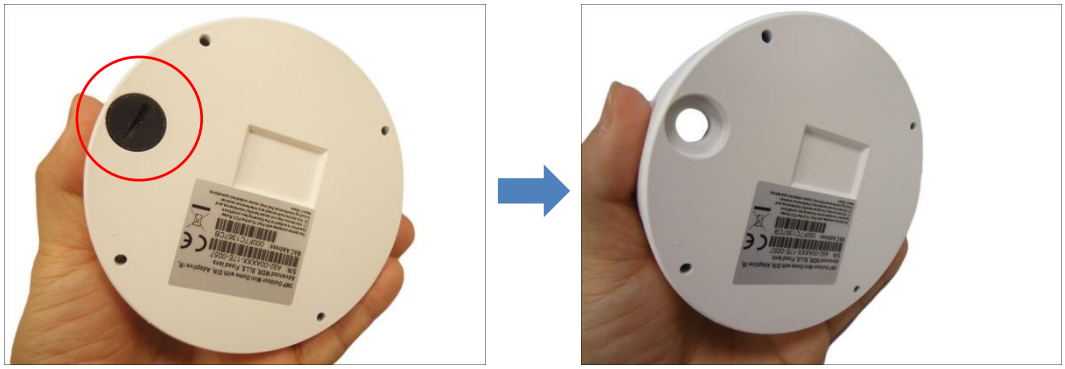


3. Remove the cables through the side cable hole. The Ethernet cable has a wider wafer head, which you may need to pull sideways to fit the cable hole.

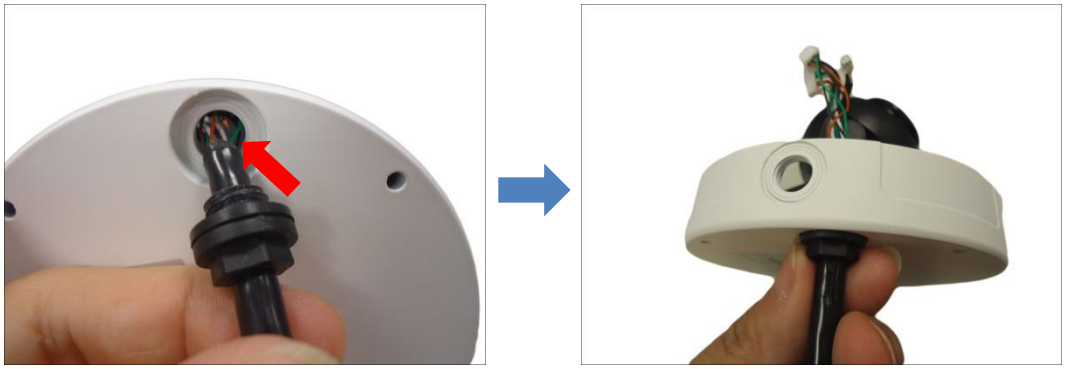


NOTE: Be careful not to damage the wafer and cables, this will void the warranty.

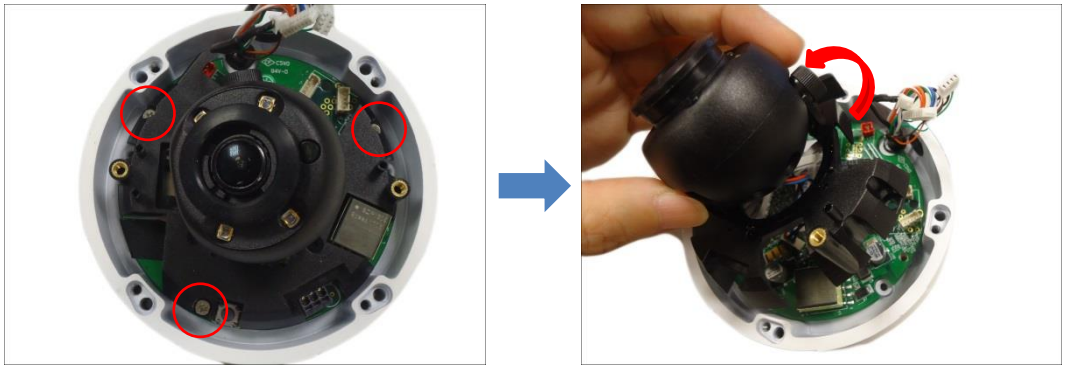
4. Unscrew the cover from the bottom hole.



5. Carefully push the cable through the hole and secure the cable gland on the hole. Make sure the gland is secured tightly to ensure waterproof.

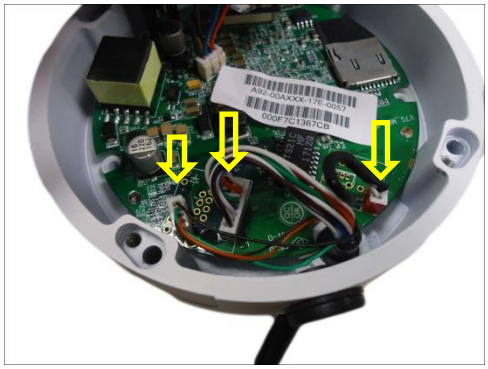


6. Remove the three (3) screws, and slightly lift the camera module enough to connect the power cable wafer (2-wire) on its connector.

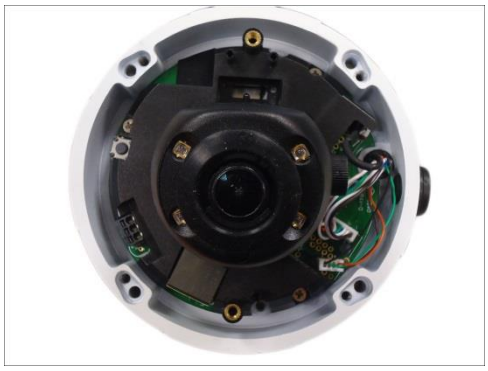


NOTE: Do not abruptly lift the camera module, cables are connected underneath.

7. Connect the wafer heads to the corresponding connectors.



8. Attach the camera module back.



How to Connect a Power Adapter

The camera can be powered by a Power over Ethernet (PoE) switch that is IEEE802.3af compliant. In case of using a non-PoE switch or your PoE switch has a limited power supply, you can purchase a power adapter and directly connect the camera to a power outlet.

NOTE: The power adapter is not bundled in the package.

After connecting the power adapter, waterproof the cable connection by using waterproof tape or enclose the cable in a junction box.

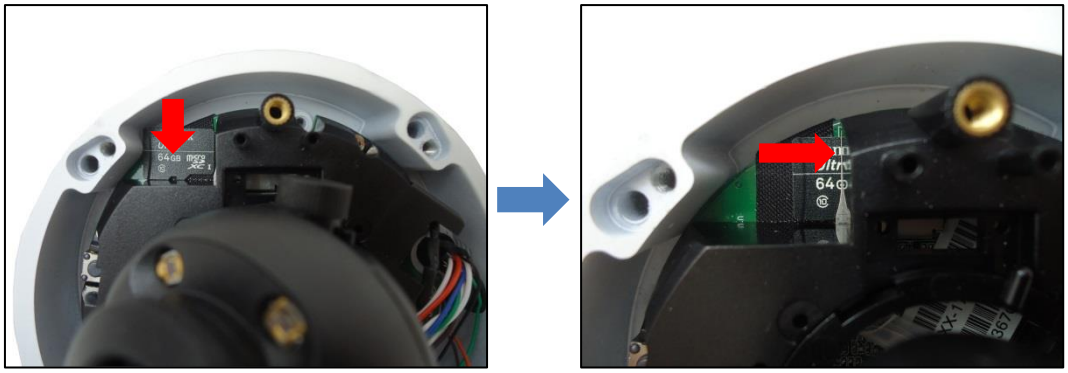
How to Install / Remove the Memory Card

NOTE: Support microSDHC and microSDXC cards.

How to Insert the Memory Card

1. Loosen the four (4) screws to remove the dome cover.

2. Place the memory card on the camera surface with the metal contacts facing down the camera, then push the card into the slot until it clicks into place.



3. Attach the dome cover to the camera and tighten the four (4) screws.

How to Remove the Memory Card

In case there is a need to remove the card, make sure to access the camera Web Configurator to safely “unmount” the card first (see the camera Firmware User’s Manual for more information). Once unmounted from the firmware, pull the card out of the slot.

Accessing the Camera

Configure the IP Addresses

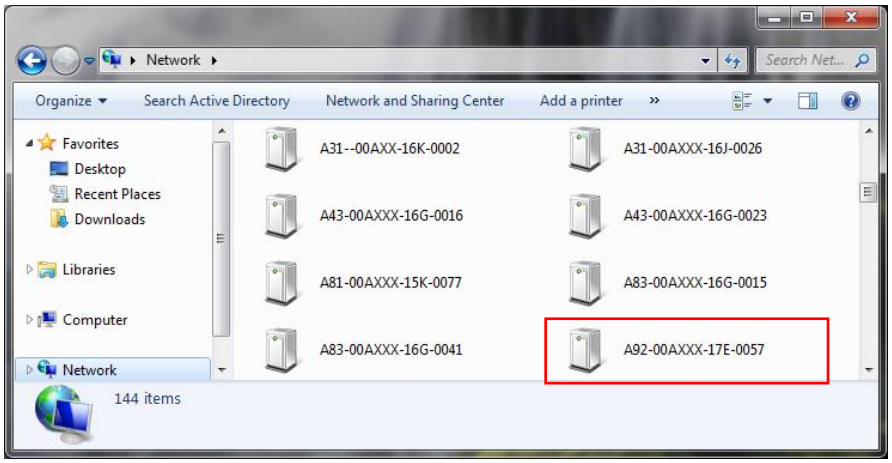
In order to be able to communicate with the camera from your PC, both the camera and the PC have to be within the same network segment. In most cases, it means that they both should have very similar IP addresses, where only the last number of the IP address is different from each other. There are 2 different approaches to IP Address management in Local Area Networks – by DHCP Server or Manually.

Using DHCP Server to Assign IP Addresses

If you have connected the computer and the camera into the network that has a DHCP server running, then you do not need to configure the IP addresses at all – both the camera and the PC would request a unique IP address from DHCP server automatically. In such case, the camera will immediately be ready for the access from the PC. The user, however, might not know the IP address of the camera yet. It is necessary to know the IP address of the camera in other to be able to access it by using a Web browser.

The quickest way to discover the cameras in the network is to use the simplest network search, built in the Windows system – just by pressing the “Network” icon, all the cameras of the local area network will be discovered by Windows thanks to the UPnP function support of our cameras.

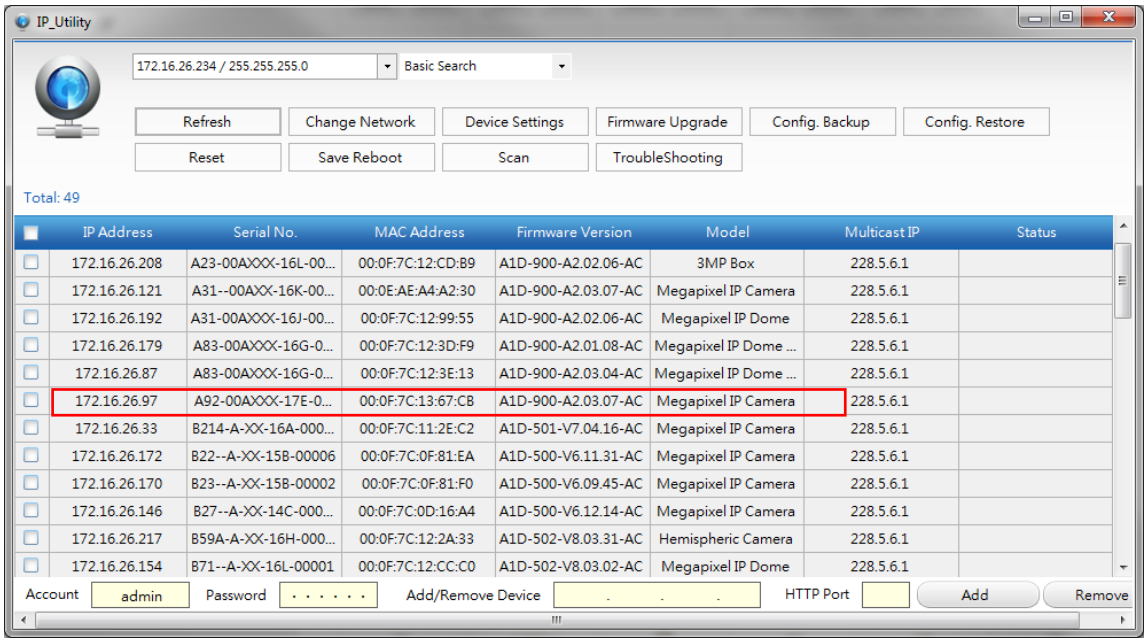
In the example below, we successfully found the camera that we had just connected to the network.



By double-clicking with the left mouse on the camera model, it is possible to automatically launch the default browser of the PC with the IP address of the target camera filled in the address bar of the browser already.

If you work with our cameras regularly, then **there is even a better way to discover the cameras in the network** – by using **IP Utility**. The IP Utility is a light software tool that can not only discover the cameras, but also list lots of valuable information, such as IP and MAC addresses, serial numbers, firmware versions, etc, and allows quick configuration of multiple devices at the same time.

The IP Utility can be downloaded for free from **http://www.acti.com/IP_Utility**
With just one click, you can launch the IP Utility and there will be an instant report as follows:



You can quickly see the camera model in the list. Click on the IP address to automatically launch the default browser of the PC with the IP address of the target camera filled in the address bar of the browser already.

Using the Default Camera IP Address

If there is no DHCP server in the given network, the user may have to assign the IP addresses to both PC and camera manually to make sure they are in the same network segment.

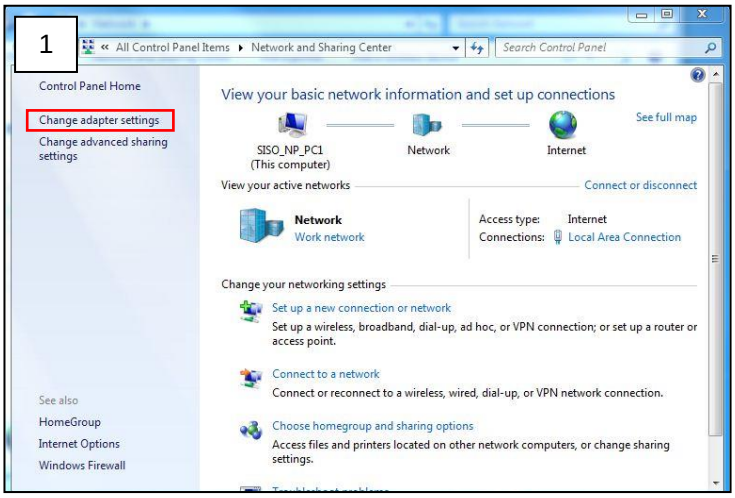
When the camera is plugged into network and it does not detect any DHCP services, it will automatically assign itself a default IP:

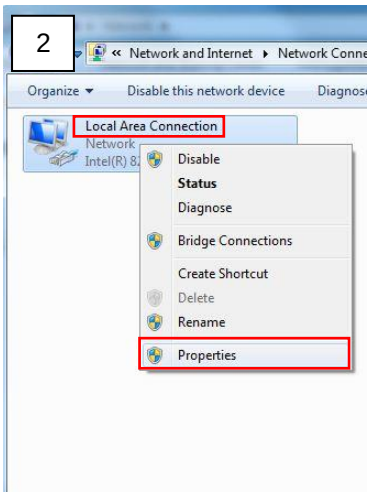
192.168.0.100

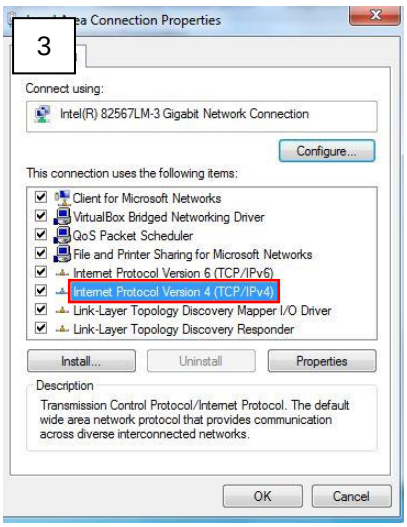
Whereas the default port number would be **80**. In order to access that camera, the IP address of the PC has to be configured to match the network segment of the camera.

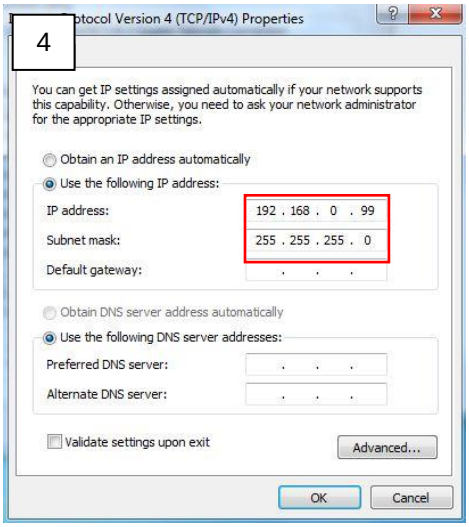
Manually adjust the IP address of the PC:

In the following example, based on Windows 7, we will configure the IP address to **192.168.0.99** and set Subnet Mask to **255.255.255.0** by using the steps below:



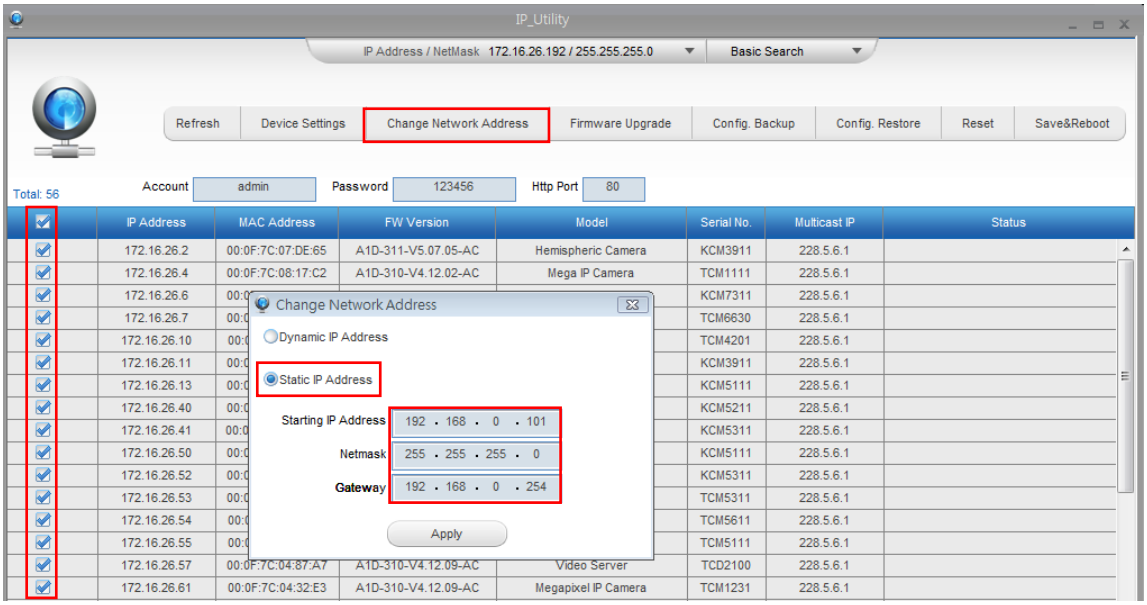






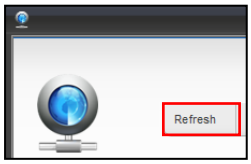
Manually adjust the IP addresses of multiple cameras:

If there are more than 1 camera to be used in the same local area network and there is no DHCP server to assign unique IP addresses to each of them, all of the cameras would then have the initial IP address of **192.168.0.100**, which is not a proper situation for network devices – all the IP addresses have to be different from each other. The easiest way to assign cameras the IP addresses is by using **IP Utility**:



With the procedure shown above, all the cameras will have unique IP addresses, starting from 192.168.0.101. In case there are 20 cameras selected, the last one of the cameras would have the IP 192.168.0.120.

Later, by pressing the “Refresh” button of the IP Utility, you will be able to see the list of cameras with their new IP addresses.



Please note that it is also possible to change the IP addresses manually by using the Web browser. In such case, please plug in only one camera at a time, and change its IP address by using the Web browser before plugging in the next one. This way, the Web browser will not be confused about two devices having the same IP address at the same time.

Access the Camera

Now that the camera and the PC are both having their unique IP addresses and are under the same network segment, it is possible to use the Web browser of the PC to access the camera.

You can use **Microsoft Internet Explorer** to access the camera.

The browser functionality:

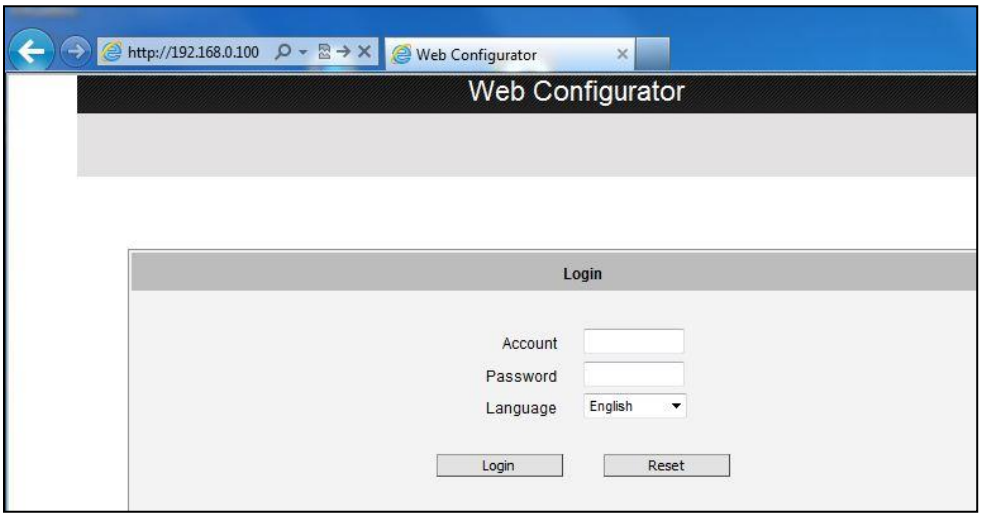
Functionality	Internet Explorer
Live Video	Yes
Live Video Area Resizable	Yes
PTZ Control	Yes
Capture the snapshot	Yes
Video overlay based configuration (Motion Detection regions, Privacy Mask regions)	Yes
All the other configurations	Yes

The following examples in this manual are based on Internet Explorer browser in order to cover all functions of the camera.

Assuming that the camera's IP address is **192.168.0.100**, you can access it by opening the Web browser and typing the following address into Web browser's address bar:

http://192.168.0.100

Upon successful connection to the camera, the user interface called **Web Configurator** would appear together with the login page. The HTTP port number was not added behind the IP address since the default HTTP port of the camera is 80, which can be omitted from the address for convenience.



Before logging in, you need to know the factory default Account and Password of the camera.

Account: **Admin**

Password: **123456**

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