

Multi-Imager Dome
People Counting Camera

About this Manual

This manual is applicable to the Multi-Imager Dome People Counting Camera.

The Manual includes instructions for using and managing the product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version in the company website.

Please use this user manual under the guidance of professionals.

Legal Disclaimer

REGARDING TO THE PRODUCT WITH INTERNET ACCESS, THE USE OF THE PRODUCT SHALL BE WHOLLY AT YOUR OWN RISKS. OUR COMPANY SHALL NOT TAKE ANY RESPONSIBILITIES FOR ABNORMAL OPERATION, PRIVACY LEAKAGE OR OTHER DAMAGES RESULTING FROM CYBER ATTACK, HACKER ATTACK, VIRUS INSPECTION, OR OTHER INTERNET SECURITY RISKS; HOWEVER, OUR COMPANY WILL PROVIDE TIMELY TECHNICAL SUPPORT IF REQUIRED.

SURVEILLANCE LAWS VARY BY JURISDICTION. PLEASE CHECK ALL RELEVANT LAWS IN YOUR JURISDICTION BEFORE USING THIS PRODUCT IN ORDER TO ENSURE THAT YOUR USE CONFORMS TO THE APPLICABLE LAW. OUR COMPANY SHALL NOT BE LIABLE IN THE EVENT THAT THIS PRODUCT IS USED WITH ILLEGITIMATE PURPOSES. IN THE EVENT OF ANY CONFLICTS BETWEEN THIS MANUAL AND THE APPLICABLE LAW, THE LATER PREVAILS.

Regulatory Information

FCC Information

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC compliance: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Conditions

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.

EU Conformity Statement



This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the EMC Directive 2014/30/EU, the RoHS Directive 2011/65/EU.



2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info



2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your

supplier or to a designated collection point. For more information see: www.recyclethis.info

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (B)/NMB-3(B) standards requirements.



Safety Instruction

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into “Warnings” and “Cautions”

Warnings: Serious injury or death may occur if any of the warnings are neglected.

Cautions: Injury or equipment damage may occur if any of the cautions are neglected.

	
<p>Warnings Follow these safeguards to prevent serious injury or death.</p>	<p>Cautions Follow these precautions to prevent potential injury or material damage.</p>



Warnings

- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.
- In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region. Please refer to technical specifications for detailed information.
- Input voltage should meet both the SELV (Safety Extra Low Voltage) and the Limited Power Source with 12 VDC according to the IEC60950-1 standard. Please refer to technical specifications for detailed information.
- Do not connect several devices to one power adapter as adapter overload may cause over-heating or a fire hazard.
- Please make sure that the plug is firmly connected to the power socket. When the product is mounted on wall or ceiling, the device shall be firmly fixed.
- If smoke, odor or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.



Cautions

- Make sure the power supply voltage is correct before using the camera.
- Do not drop the camera or subject it to physical shock.

- Do not touch sensor modules with fingers. If cleaning is necessary, use clean cloth with a bit of ethanol and wipe it gently. If the camera will not be used for an extended period, please replace the lens cap to protect the sensor from dirt.
- Do not aim the camera at the sun or extra bright places. Blooming or smearing may occur otherwise (which is not a malfunction), and affect the endurance of sensor at the same time.
- The sensor may be burned out by a laser beam, so when any laser equipment is in using, make sure that the surface of sensor will not be exposed to the laser beam.
- Do not place the camera in extremely hot, cold (the operating temperature shall be -10°C to $+40^{\circ}\text{C}$ for indoor cameras, and -30°C to $+60^{\circ}\text{C}$ for outdoor and mobile cameras), dusty or damp locations, and do not expose it to high electromagnetic radiation.
- To avoid heat accumulation, good ventilation is required for operating environment.
- Keep the camera away from liquid while in use.
- While in delivery, the camera shall be packed in its original packing, or packing of the same texture.
- Regular part replacement: a few parts (e.g. electrolytic capacitor) of the equipment shall be replaced regularly according to their average enduring time. The average time varies because of differences between operating environment and using history, so regular checking is recommended for all the users. Please contact with your dealer for more details.

- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.
- If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble the camera yourself. (We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.)

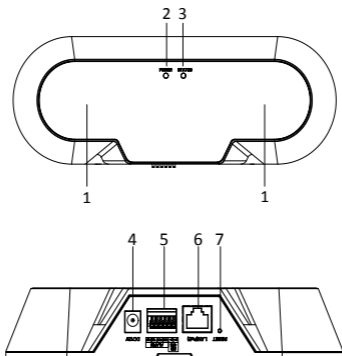
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Description

Attention!

Disassembling the camera without professional technical instruction may affect the accuracy of people counting function. Contact the technical support for repair if any malfunction happens.



Overview of Camera

No.	Description	
1	Lens	
2	Power indicator	Solid red: running properly
		Off: power supply abnormal
3	Status indicator	Solid blue: running properly
		Flashing red: network connection abnormal
		Flashing blue: other exceptions
4	Power supply interface (12 VDC)	
5	RS-485 and alarm I/O interface	
6	Network interface (support power over Ethernet)	
7	Reset button	

Note:

Press RESET for about 10 seconds when the camera is powering on or rebooting to restore the default settings, including the user name, password, IP address, port number, etc.

Installation

Before you start:

- Make sure the device in the package is in good condition and all the assembly parts are included.
- The standard power supply is 12V DC, please make sure your power supply matches your camera.
- Make sure all the related equipment is power-off during the installation.
- Check the specification of the products for the installation environment.
- Make sure that the ceiling is strong enough to withstand four times the weight of the camera and the bracket.

Camera Installation

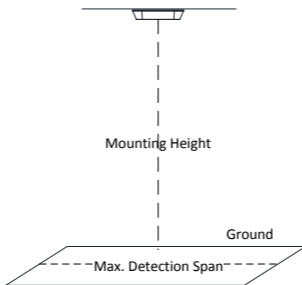
Steps:

1. Select a suitable mounting position.

The relations among focal length (for the focal length of your camera, see the label on camera body), mounting height, and maximum detection span are shown in the following table.

Quick Start Guide

Installation Recommendation

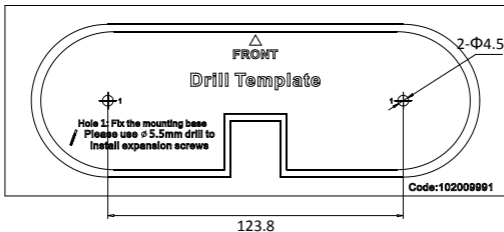


Focal Length (mm)	Mounting Height (m)	Max. Detection Span (m)
2.0	2.5	1.8
2.0	3.0	2.9
2.0	3.5	4.0
2.0	4.0	5.2
2.8	3.0	2.2
2.8	3.5	3.1
2.8	4.0	4.0
2.8	4.5	4.8
2.8	4.7	5.2
4.0	4.0	2.8
4.0	4.5	3.4
4.0	5.0	4.0
4.0	5.5	4.6
4.0	6.0	5.2

Notes:

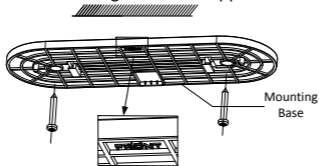
- Mounting height of 2.0 mm lens camera should be no higher than 4 meters, and 2.8 mm lens camera no higher than 4.8 meters.
- The camera must be installed on a flat surface parallel to the ground (or, the optical axes of both lenses should be perpendicular to the ground).
- It is recommended to install the camera at an entrance/exit, where the detection area can be covered better.

2. Paste the drill template to the desired mounting place.



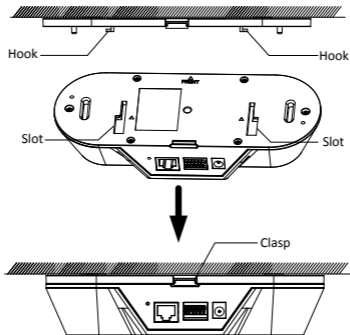
Drill Template

- Align the "Front" mark on drill template with that on mounting base. Fix the mounting base with supplied screws.



Fix the Mounting Base

- Align the "Front" mark on the mounting base with that on camera bottom.
- Fit the hooks on mounting base in the big end of the slots on camera bottom. Push to get the camera clasped.



Install the Camera

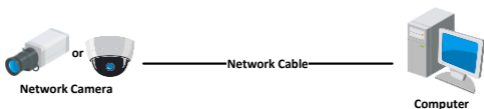
Setting the Network Camera over the LAN

Note:

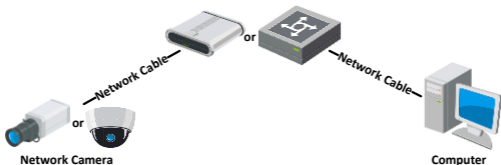
You shall acknowledge that the use of the product with Internet access might be under network security risks. For avoidance of any network attacks and information leakage, please strengthen your own protection. If the product does not work properly, please contact with your dealer or the nearest service center.

Wiring

Connect to the camera to the network according to the following figures.



Connecting Directly



Connecting via a Switch or a Router

Activating the Camera

You are required to activate the camera first by setting a strong password for it before you can use the camera. Activation is done via Web Browser.

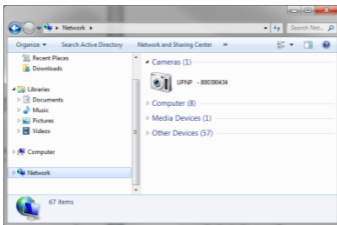
Activation via Web Browser

Steps:

1. Power on the camera, and connect the camera to the network.
2. Input the IP address into the address bar of the web browser, and click Enter to enter the activation interface.

Notes:

- The default IP address of the camera is 192.168.0.100.
- The computer and the camera should belong to the same subnet.
- For the camera with the DHCP enabled by default, you can find the camera by clicking on **Network** > **Camera** on Windows, the computer will instantly discover and show the camera serial number. Double-click to launch the Web Browser.



3. Create a password and input the password into the password field.



STRONG PASSWORD RECOMMENDED– *We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.*

4. Confirm the password.
5. Click **OK** to save the password and enter the live view interface.

Accessing via Web Browser

System Requirement:

Operating System: Microsoft Windows XP SP1 and above version

CPU: 2.0 GHz or higher

RAM: 1G or higher

Display: 1024×768 resolution or higher

Web Browser: Internet Explorer 8.0 and above version, Apple Safari 5.0.2 and above version, Mozilla Firefox 5.0 and above version and Google Chrome 18 and above version

Steps:

1. Open the web browser.
2. In the browser address bar, input the IP address of the network camera, and press the **Enter** key to enter the login interface.

Note:

- The default IP address is 192.168.0.100.
 - If the camera is not activated, please activate the camera first according to Section 3.2.
3. Input the user name and password.

The admin user should configure the device accounts and user/operator permissions properly. Delete the unnecessary accounts and user/operator permissions.

Note:

The device IP address will be locked after 7 consecutive failed login attempts (5 for the user/operator).

4. Click **Login**.

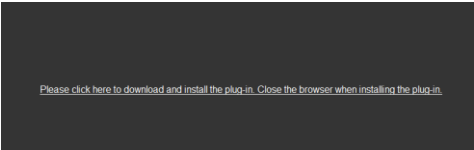


A screenshot of a login form. It features two input fields: the top one is for a username, indicated by a person icon, and the bottom one is for a password, indicated by a lock icon. Below the fields is a grey button labeled "Login".

5. Install the plug-in before viewing the live video and managing the camera. Please follow the installation prompts to install the plug-in.

Note:

Close the web browser to finish the installation of the plug-in.



[Please click here to download and install the plug-in. Close the browser when installing the plug-in.](#)

6. Reopen the web browser after the installation of the plug-in and repeat steps 2 to 4 to login.

Configuring People Counting

The People Counting function is used to calculate the number of people entering, exiting, and passing by an area. It is widely applied to the entrances and exits.

Before you start:

The camera is recommended to be installed right above the entrance/exit, and make sure it is installed properly.

Refer to *Quick Start Guide of Dual-Lens People Counting Camera* for installation advice.

About the task:

To complete the configuration, you should:

- Set up counting rule
- Set up data uploading
- Set up advanced parameters

Rule Setting

Rule setting is compulsory for proper functioning of the camera.

Rule

Steps:

1. Enter configuration interface: **Configuration > People Counting**
2. Enable people counting function.
3. Set up camera calibration. Auto calibration and manual calibration are selectable.

- **Auto Calibration:** camera automatically calculates the lens height.
- **Manual Calibration:** lens height should be measured by the users.

Note:

If the level ground area occupies less than 25% of the whole image, use manual calibration.

Auto Calibration

1. Select calibration mode as **Auto**.
2. Drag the calibration area (the green rectangle in image) to cover a level area of the ground. You can adjust the size of the green rectangle by dragging its angles.

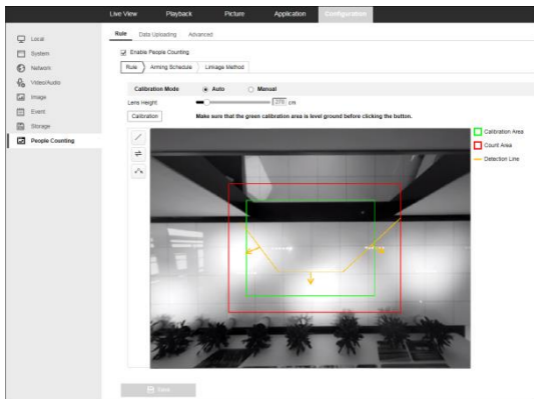
Notes:

- The calibration area is recommended to cover a richly-textured surface with balanced brightness distribution.
 - Do not put the calibration area near the edge of the image.
3. Click **Calibration**.
The camera calculates the lens height and returns the value, and displays the red count area and the orange detection line in image.
 4. Check the returned lens height and compare it with the actual lens height to see if the camera is properly calibrated.

Quick Start Guide

A convenient way is that you check the Display Height checkbox (**People Counting > Advanced**), ask a 180 cm person to go pass the camera, and check the calculated height of the person displayed in live image. If the error is less than 5%, then the auto calibration is considered as a valid one.

If the auto calibration is considered invalid, repeat above steps again. Or you can use manual calibration.



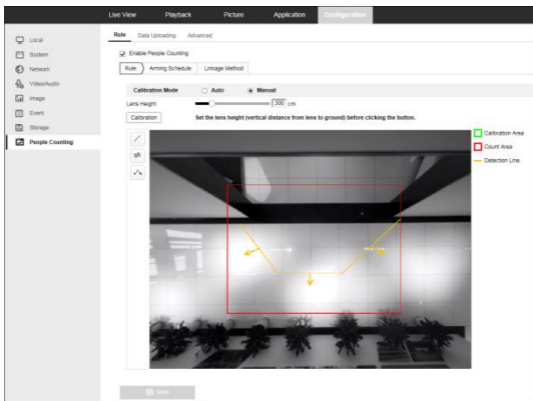
Auto Calibration

Manual Calibration

Manual calibration is recommended if it is easy to measure the lens height.


1. Select calibration mode as **Manual**.
2. Measure the lens height from the ground. Input the value into the **Lens Height** field.
3. Click Calibration.



The camera displays the red count area and the orange detection line in image.



Manual Calibration

4. Adjust detection line and the direction.

You can drag the straight line and its endpoints to adjust its position and length to better cover the entrance/exit. Click  to change the direction of the detection line arrow. **The arrow stands for the direction of entering.**

If the returned straight line cannot cover the entrance/exit, you can click  and adjust the position and shape of the returned polyline. Click  to change the direction of the detection line arrow. **The arrow stands for the direction of entering.**

Notes:

- The detection line should completely cover the entrance/exit after adjustment. No person could pass without crossing the detection line.
- The detection line should be placed within the count area.
- The detection line should be placed at ground area of the image.

