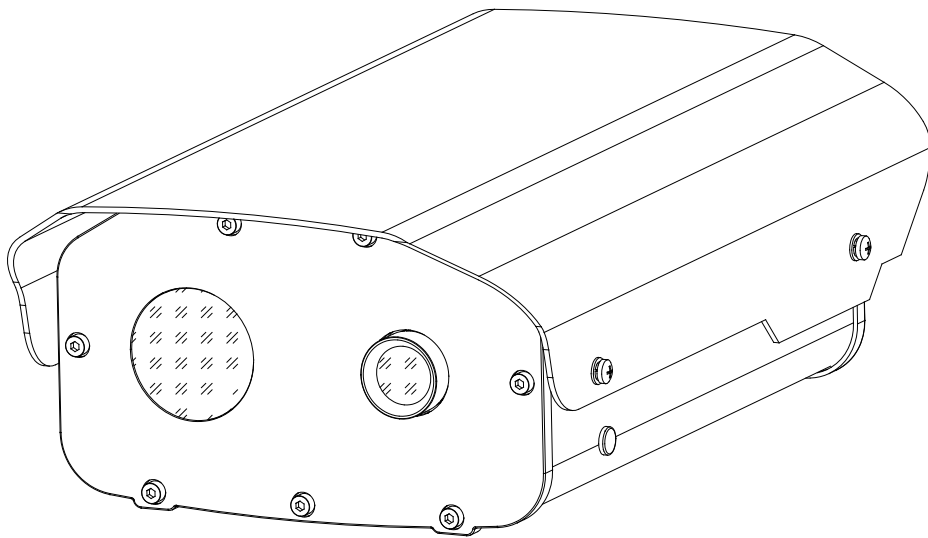


Infrared Body Temperature Screening Thermal Camera

User Manual



2020-03

Thank you for purchasing our Infrared Body Temperature Screening Thermal Camera. Please read this manual carefully before using. This camera's technical specifications, operational methods and precautions are all included in this manual.

If you need any other information not included in this manual, please feel free to contact us.

The company reserves the right to modify this manual without prior notification.

Dangers

1. Please read this manual carefully before installation.
2. Please note the warning notices on the camera and in this manual.
3. Please apply exactly the power supply and voltage listed in this manual.
4. For safety and camera's proper functioning, please don't power on the camera while connecting cables.
5. Please ensure the intactness of the power line in case of injury and damage.
6. Please install anti-lighting device in case of thunderstruck.
7. Please mount this camera on a secure platform or bracket in case of injury.
8. Unauthorized dismantling of this camera may incur injury or damage, so please contact us directly for any malfunction matters.
9. In order to protect the lens from being stained or scratched, please don't touch it.

Caution

1. For ensuring camera's proper functioning, please don't cover camera front.
2. Protect the camera from direct sunlight to ensure the detector not being damaged.
3. In case of water leakage, please don't use organic solvent to clean camera's housing.
4. Please wait for another 30s before restarting camera.
5. For camera with preset function, please pay special attention:

It should avoid to patrol for long time, especially when the stay time is short for each preset. The motor of zooming & focusing lens is easy broken parts and can be easily damaged if patrolling for long time. If it is really necessary to use the patrol function, we strongly recommended NOT to use the preset function or extend the stay time for each preset. Please kindly contact us if you would like to know more info.

6. The temperature measurement needs to be performed after the thermal imager is powered for 30 minutes to run stably.

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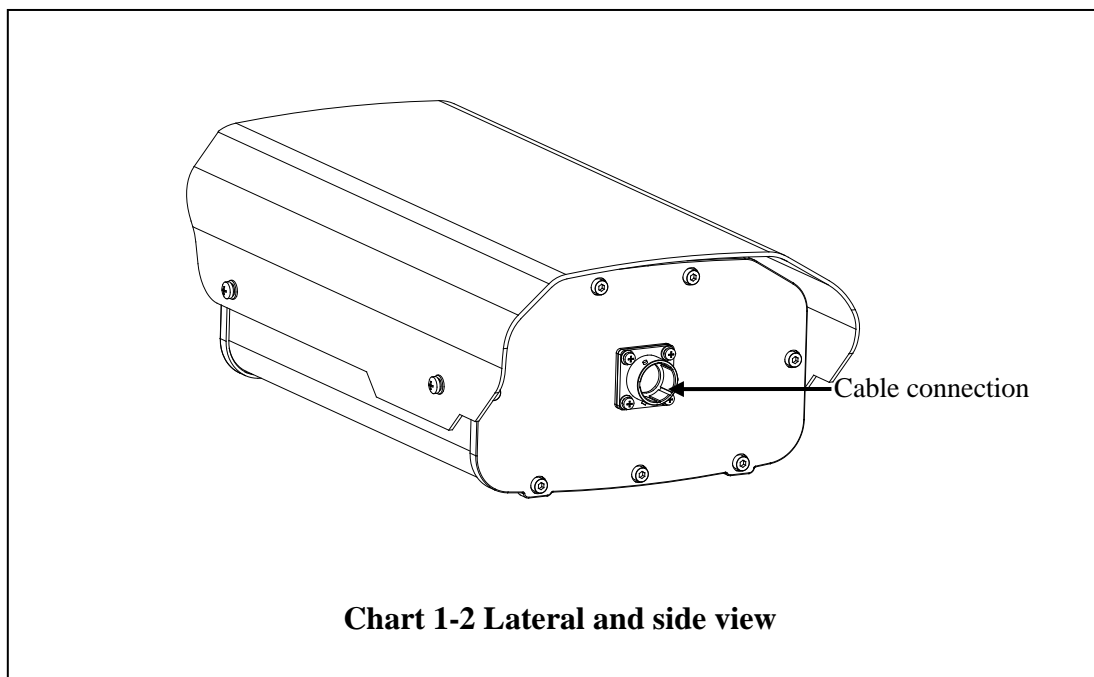
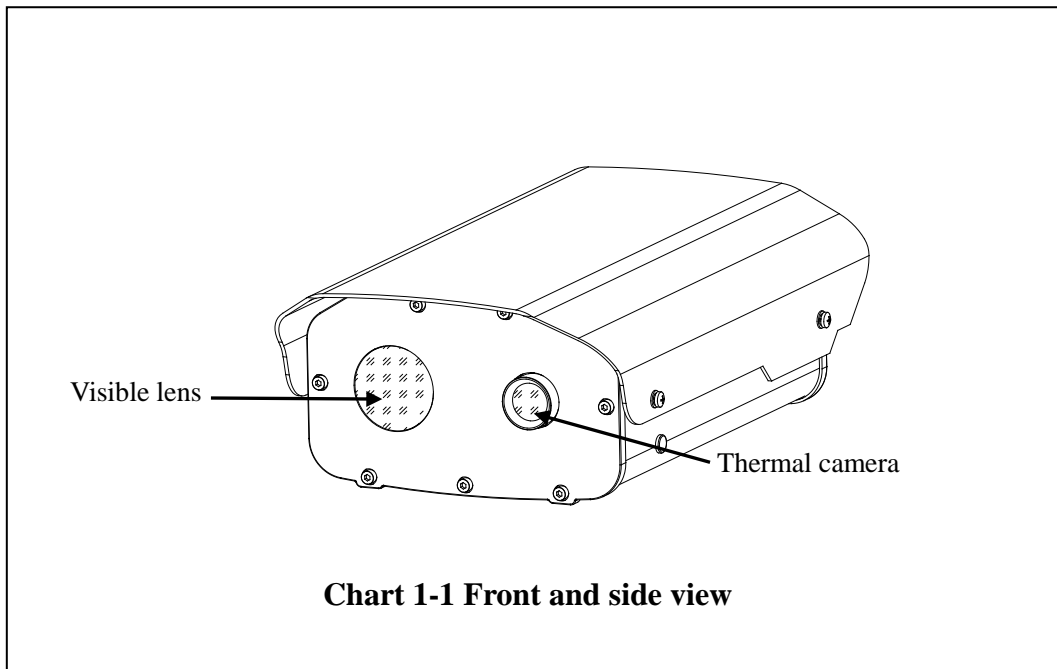
Chapter 1 Camera Introduction

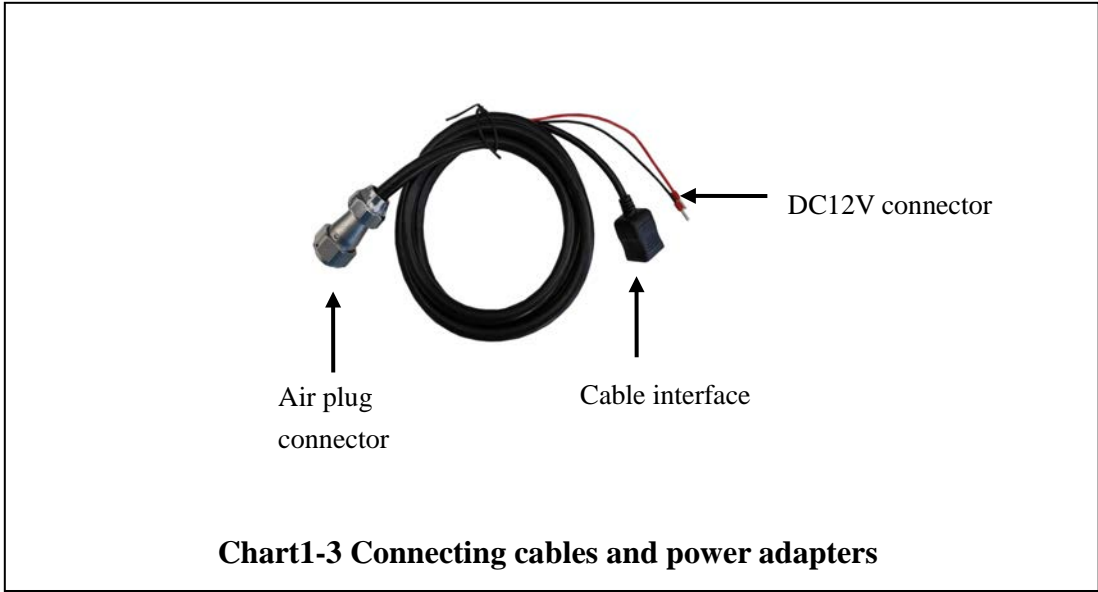
1. Overview

Infrared Body Temperature Screening Thermal Camera, It is a non-contact, large-area, accurate, and efficient temperature measurement and screening device specially designed for dense crowds in public places. Based on the accurate temperature measurement technology of thermal imaging, people with abnormal body temperature can be detected and alarmed in time to assist the supervision department to implement rapid intervention methods. And emergency measures to prevent the spread of the virus epidemic in public places from the danger of spreading infected people in a wide range. It can be widely used in airports, railway stations, passenger stations, subway stations and other comprehensive transportation hubs, as well as in crowded areas such as schools and comprehensive parks.

The entire system includes a front-end human body temperature measuring camera and temperature management software. Customers can configure and control computers by themselves. The management computer is equipped with temperature management software for managing temperature measurement equipment and temperature alarms.

2. Appearance





3. Dimension(mm)

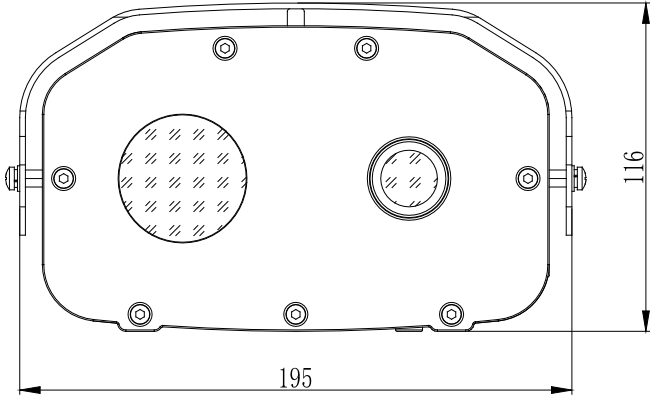


Chart 1-4 Front view

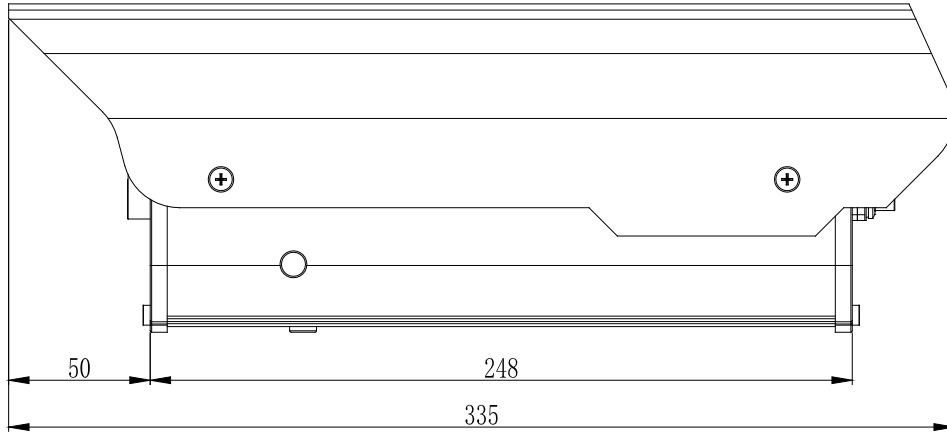


Chart 1-5 Lateral view

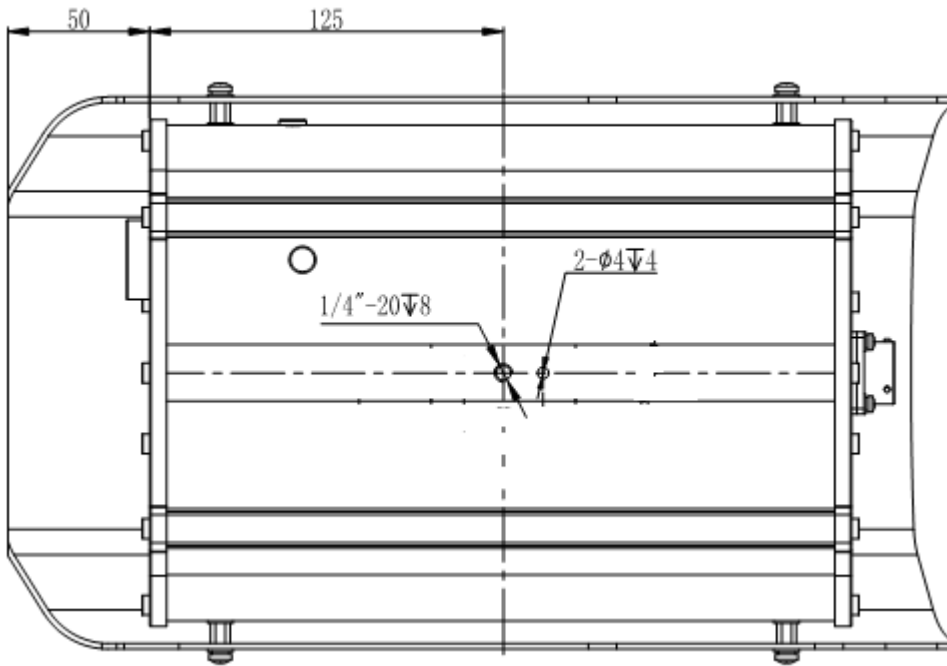


Chart 1-6 Mounting holes at the bottom of the camera

4. Connector

Camera output line definitions:

Pin No.	1	2	3	4	5	6
Pin definition	12V+ Red	GND Black	Orange white TX+ (RJ45-1)	Orange TX- (RJ5-2)	Green white RX+ (RJ45-3)	Green RX- (RJ45-6)
Pin No.	7	8	9	10	11	12
Pin definition	Blue	Blue white	Brown white	Brown	NC	NC

Chapter 2 Operation

1. Installation and cable connection

(1) Installation

There are mounting holes on the bottom of the camera, as shown in Figure 1-6. Ordinary photography tripod can be used for quick installation. The installation scheme is shown in the figure below.

Quick-install panel:



Remove the panel immediately by pulling the lever slightly backwards.

After placing the panel, press it down to snap the base.

Mounting holes at the bottom of the camera:

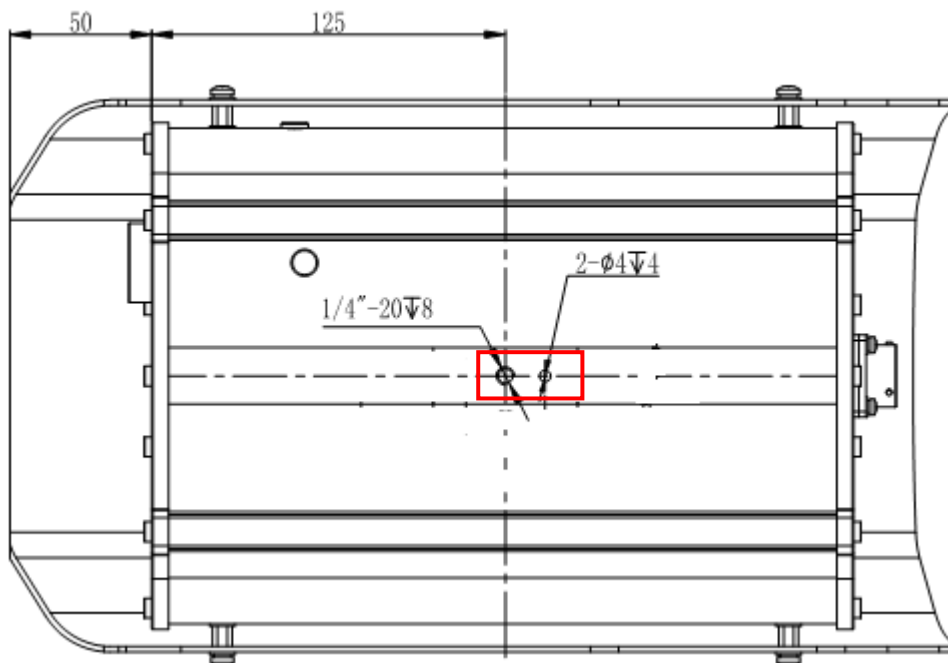




Chart 2-1 Tripod quick setup drawing

(2) Aviation Plug Installation



Chart 2-2 Aviation Plug Hole

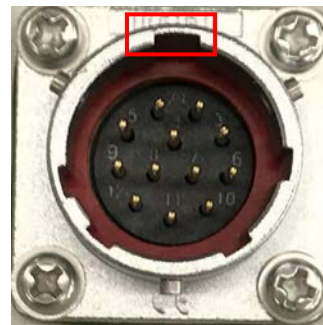


Chart 2-3 Aviation plug Pin

When installing, please insert the head hole into the socket, make sure that the pin is inserted into the socket, then twist the upper fixed ring upward and to the right, and then complete the docking after hearing "Click" .

When removing the plug, please twist the plug to the left, the plug will be removed, with the pin plug separation.

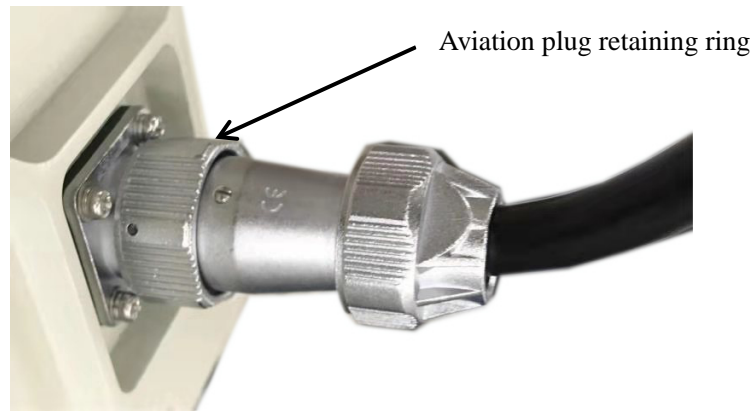


Chart 2-4 Aviation Plug Finished Installation

(3) Cable connection

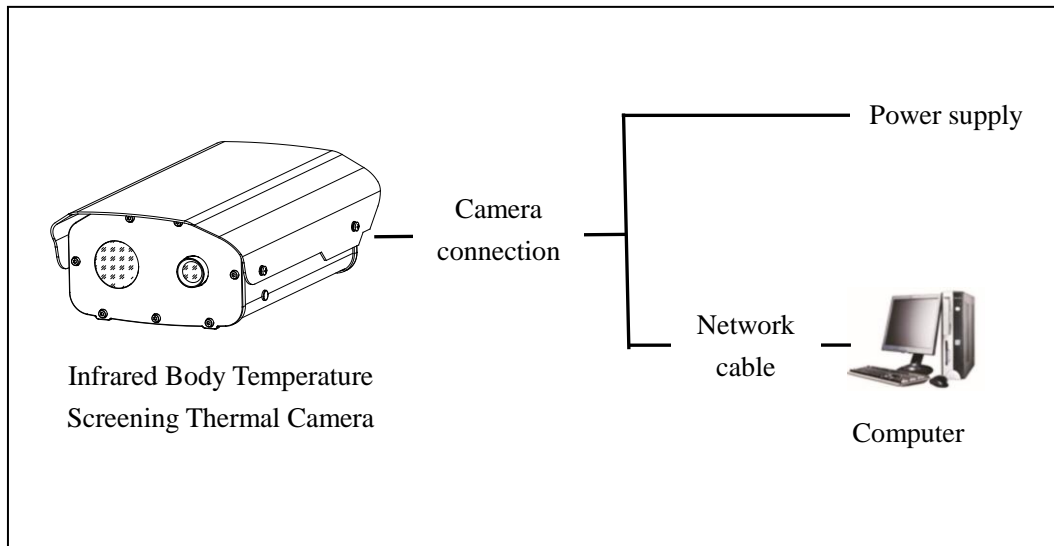


Chart 2-5 connection diagram

2. Recommended installation environment

The temperature measurement principle of the infrared camera is measured by collecting infrared radiation radiated from the surface of the body of the person. The environmental conditions related to infrared transmission will affect the temperature measurement accuracy, especially air flow, air transmission rate, environmental humidity, and environment Temperature and other factors, it is strongly recommended that the camera be installed in an indoor environment. And to choose the appropriate

installation height and temperature measurement distance, the following diagram shows the installation environment recommendations.

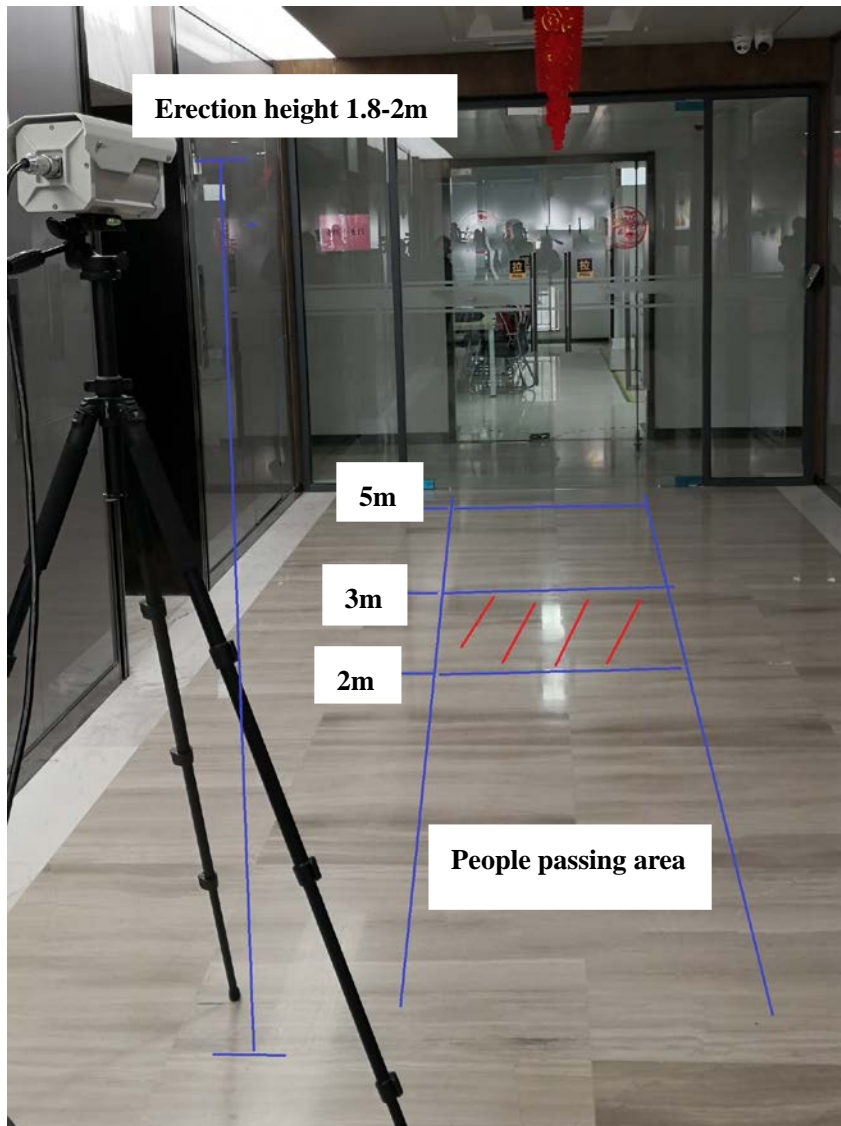


Chart 2-6 Camera installation recommendations

The erection height is about 1.8-2 meters, the working distance is generally 2-5 meters, and the best temperature measurement distance is about 2-3 meters.



Chart 2-7 Camera installation and display

3. Common Faults

The table below includes the common faults during operation. Whenever these problems occur, you may refer to this table or contact us directly for proper solution.

Fault	Possible Cause	Solution
No image on	Power damage or under	Replace the original power.

camera after power on	power	
	Wrong connection of power line	Reconnect
	Circuit malfunction	Check circuit
	The network is not connected	Check the network connection cables to ensure that the wiring is correct and in good contact
	Firewall blocks video transmission	Turn off the firewall on the client computer
Unclear image	Lens covered by objects	Check if there is any cover
	Dirty lens	Clear lens

Chapter 3 Blackbody use and installation instructions

1. Product appearance



Note: Please refer to the real object for the appearance of the blackbody. This picture is for reference only.

2. Instructions

- (1) Connect the power supply, the power supply is AC220V.
- (2) Press the power switch, the indicator light is on to indicate that the power is on.
- (3) The factory default is 35 ° C, and the temperature will automatically rise to 35 ° C when the machine is turned on. If other temperature points are set during use, it will automatically rise to the temperature set last time when it is turned on next time.
- (4) Temperature setting:



In this interface, press ◀. ▲. ▼ key to adjust the value in the (SV) window, set the required temperature, and after the adjustment, wait for the number to no longer change, and the temperature can be used for measurement after 30 minutes.

(5) The blackbody furnace has been tested in operation when it leaves the factory. All parameters of the intelligent temperature controller have been optimized. It is forbidden to modify the parameters by yourself when not necessary.

(6) After use, cut off the power.

3. Precautions for using blackbody

Before use, please check if there is enough space around you. The bottom and back of the device is a heat dissipation area. When using it, pay attention to cleaning up foreign objects that are easily sucked in to prevent damage to the device!

The black body furnace can be used in a laboratory, a measurement room or a production site, and it should be placed horizontally on a table during use. When setting the instrument to be calibrated, it shall be kept at a specified distance from the bullseye of the black body furnace. At the same time, the instrument calibration system and the black body radiation surface must be on the same axis.

In order to ensure the accuracy of temperature measurement, please place the surface temperature calibrator in a stable temperature environment. The ideal environment temperature is $10 \text{ }^{\circ}\text{C} \sim 25 \text{ }^{\circ}\text{C}$.

The inspection must start from the low temperature point and then to the high temperature point. In order to prevent the rapid changes in temperature from damaging the components in the furnace, when the temperature rises from low temperature to high temperature or decreases from high temperature, it is necessary to

stop the test and wait for the temperature in the furnace to approach room temperature before starting the test.

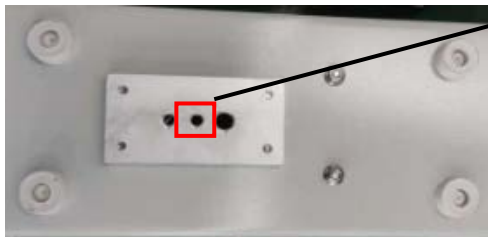
Before installing or moving the instrument, turn off the power to avoid accidents such as electric shock.

When used in the field, the power plug must be reliably grounded!

Do not disassemble the components yourself. If there is any problem, please contact our company for repair.

4. Installation instructions

- Blackbody installation

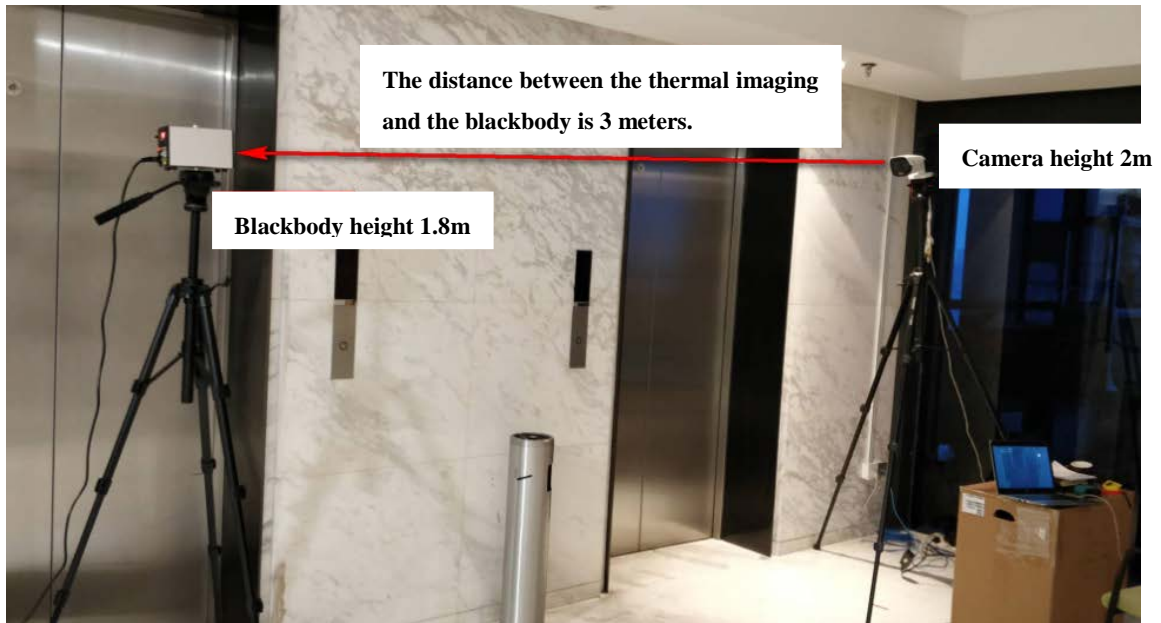


Mounting holes at the bottom of the blackbody



Remove the panel and install it into the mounting hole at the bottom of the black body (choose one), and then install the black body as a whole back onto the tripod.

- Installation height of thermal imaging temperature measuring camera: 2 meters; installation height of black body: 1.8 meters. The product installation is shown as follows:



Thermal camera tripod installation diagram

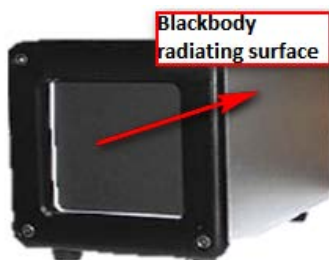
- The thermal imaging camera and the black body are installed on the same side, the pedestrian path is on the other side, and the distance between the camera and the black body is 3 meters, to avoid obstruction between the camera and the black body during temperature measurement.

Thermal imager and blackbody on the same

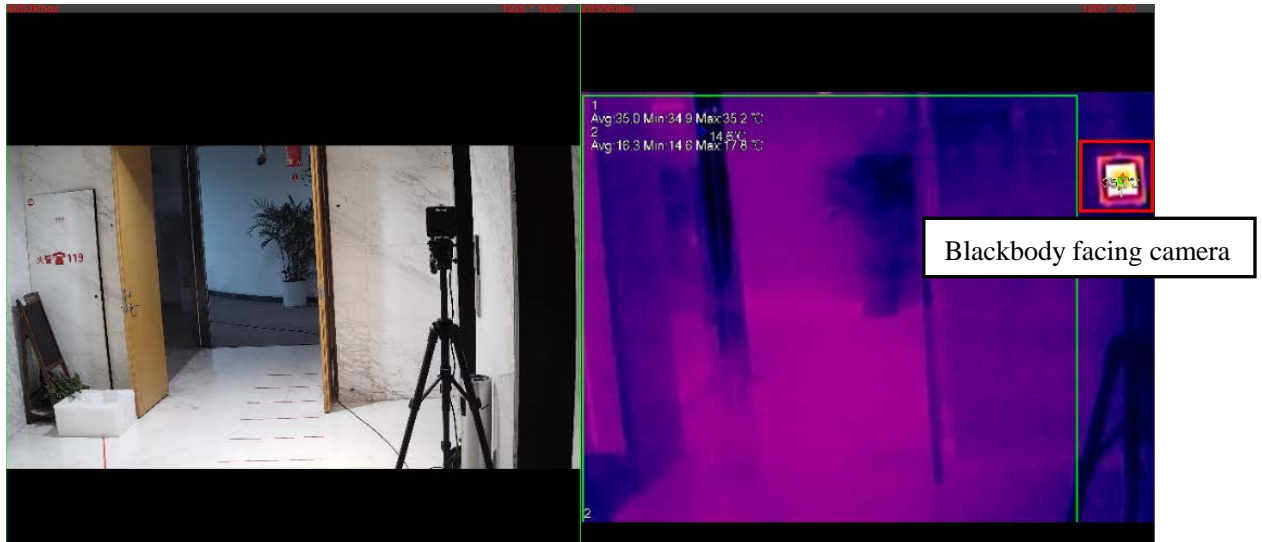


Blackbody installation diagram

- The radiating surface of the black body must be facing the camera's irradiation direction, and the black body must be on the left or right of the thermal imaging screen.

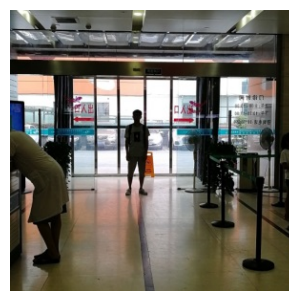


The following boldface is on the right side of the image:



Black body installation diagram

- The camera's top-view angle is less than 30 degrees.
- It is required that the visible light channel has sufficient illumination, and avoid the effects of backlighting, returning light, strong light change, blocking, and high temperature interference.
- The installation area needs to be relatively isolated and stable from the outside world. Avoid outdoor or outdoor communication scenarios. It is not suitable for environments with airflow or strong electromagnetic interference or vibration.



Avoid the installation scene diagram (insufficient light: backlight / outdoor scene)

Chapter 3 Camera debugging instructions

The configuration of temperature measurement monitoring is configured after logging in to the thermal imager through the web.

Note: It is recommended to use Internet Explorer for web login. For non-IE browsers, please use the compatibility mode to log in. Do not use the speed mode. When you log in for the first time, you will be prompted to install the plug-in. After downloading and installing the plug-in as prompted, you can log in again to preview the video normally. Do not use Edge browser for Windows 10.

Web login parameters:

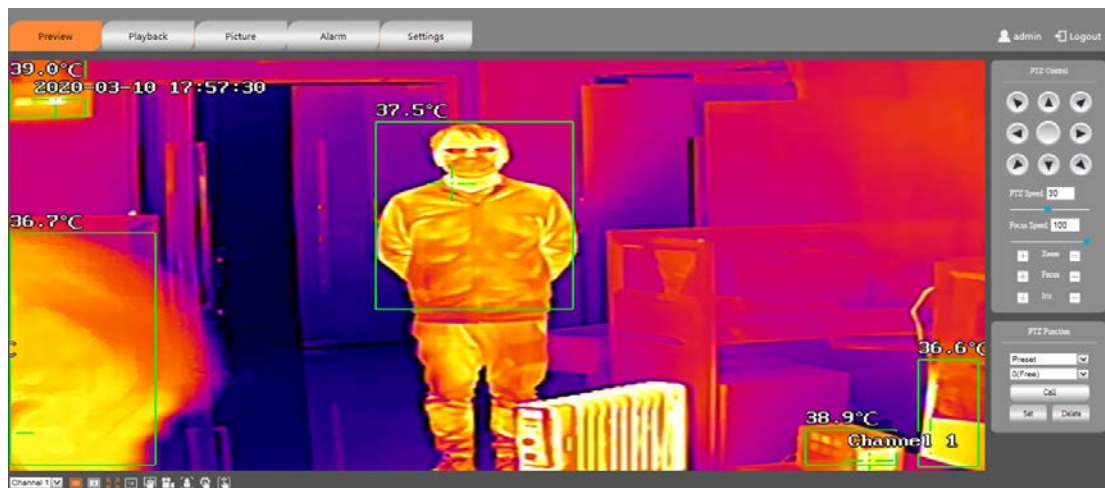
Default IP address for camera: 192.168.1.65

User: admin

Password: Abc.12345

(1) Preview

After logging into the thermal imager web, you will enter the video preview interface by default.

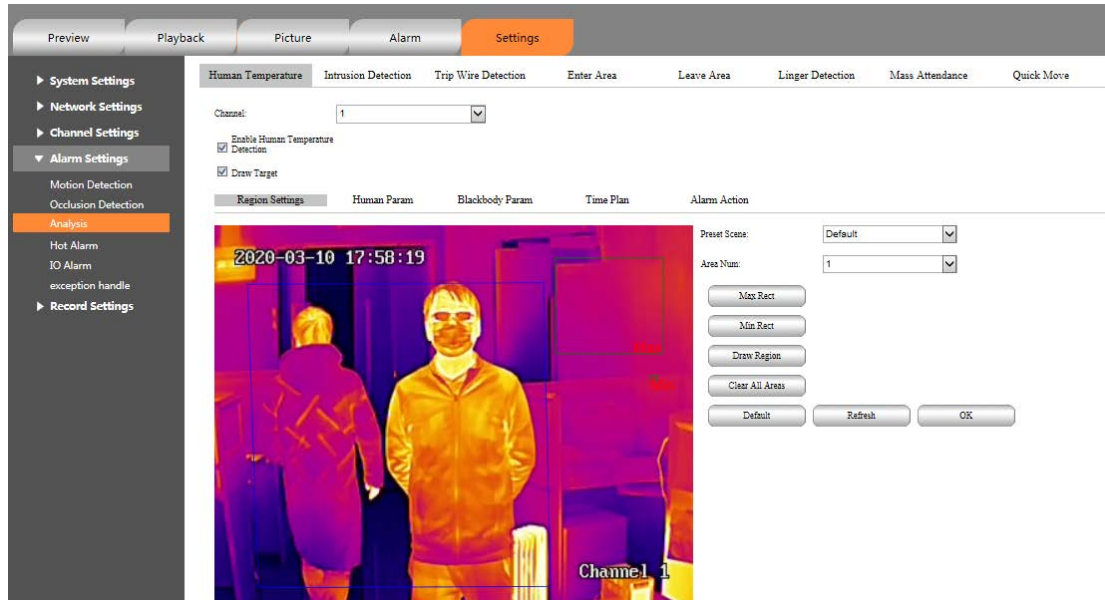


(2) Region Settings

Switch to Settings-Alarm Settings-Analysis-Human Temperature-Region Settings, click "Draw Region" to draw a rectangular temperature measurement area with the left mouse button, click OK to save. Click "Max Rect", use the left mouse button to draw the target maximum size, click "Min Rect", use the left mouse button to draw the target minimum size, click OK to save. The maximum and minimum sizes

are used to filter the target size, please follow the face size in the actual scene to draw.

Click "Clear All Areas", click OK to save, you can clear all the detection areas drawn.

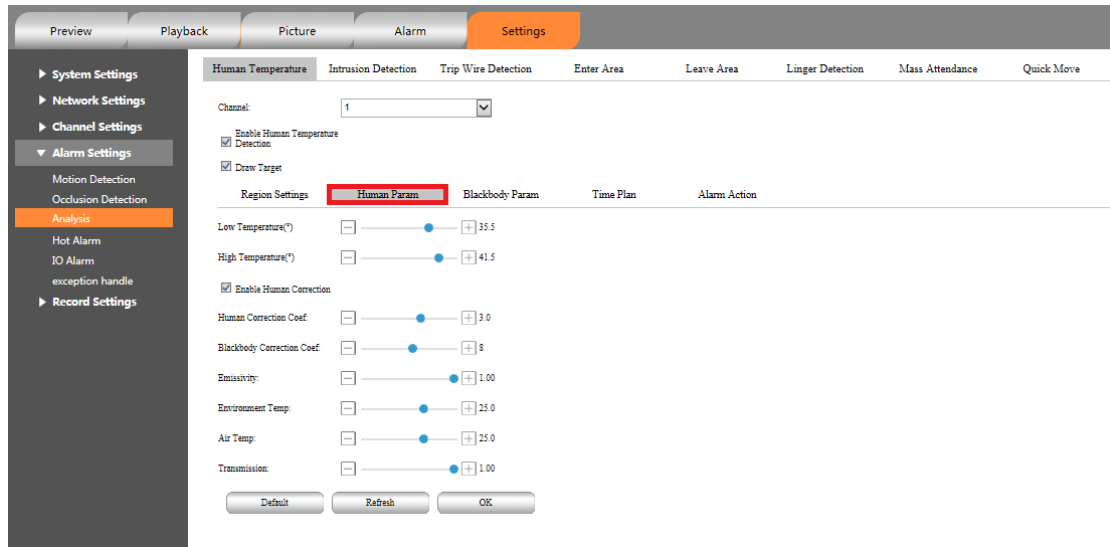


(3) Temperature measurement parameters

Switch to Settings-Alarm Settings- Analysis-Human Temperature-Human Param.

Our temperature camera is calibrated when it leaves the factory, but the accuracy of the device's temperature measurement is affected by the environment, so it may need to be debugged according to the use environment. The specific calibration guidelines are as follows:

Set "Low Temperature" and "High Temperature" to filter false positives. The thermal imager only detects targets within this temperature range. The default values are "Low Temperature" 36 and "High Temperature" 40; if the value is not set properly, the temperature may not be detected.

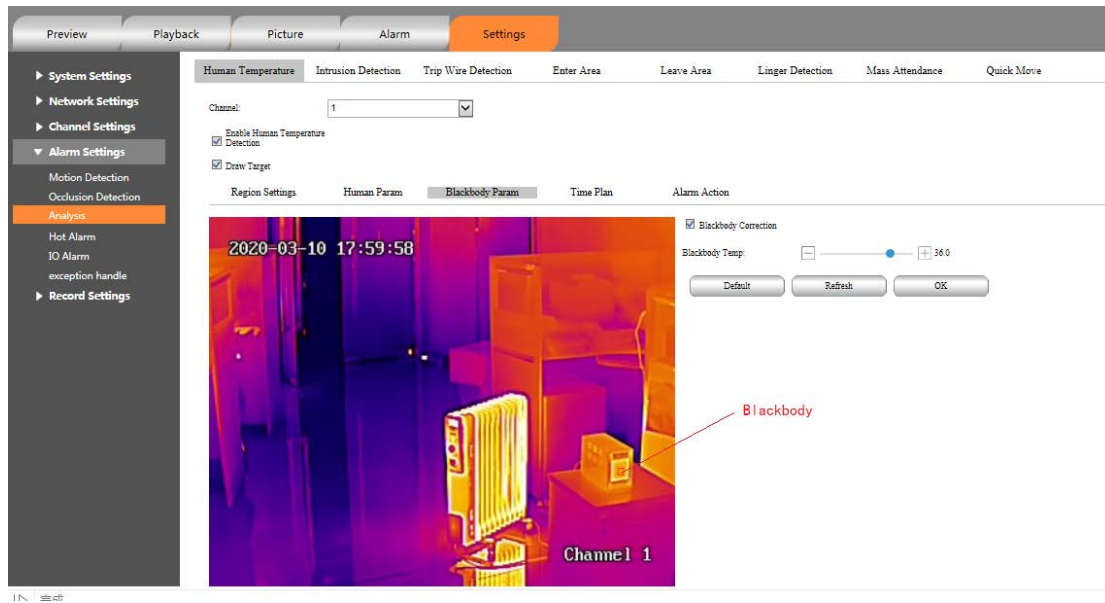


(4) Blackbody Param

If there is a black body with a thermal camera on site, you can choose to configure the black body mode, which can further improve the temperature measurement accuracy and stability. The specific correction guidelines are as follows:

Switch to Settings-Alarm Settings- Analysis-Human Temperature-Blackbody Param, put a check mark in front of "Blackbody Correction", use the mouse to draw the detection area, and the frame for blackbody calibration should be drawn in blackbody. Set "Blackbody Temp" to match the actual blackbody temperature. Click OK to save.

The radiating surface of the black body must face the camera's irradiation direction, and the black body must be on the left or right of the thermal imaging picture.



(5) Precautions

1. Our thermal imaging temperature measurement products can be continuously operated continuously. If the power is off and restarted, it needs to warm up for half an hour, and the temperature of the standby can be accurately measured before the ambient temperature stabilizes.
2. The detection area should be drawn to avoid high temperature interference to prevent false alarms.
3. The installation place of the equipment should avoid the location of ventilation and direct sunlight.
4. If it is used in outdoor environment, the outdoor tent should use L-shaped, side door to enter, the main door out, and it is best to have a heater in the tent.

Chapter 4 Instructions for software

(1) Software Installation

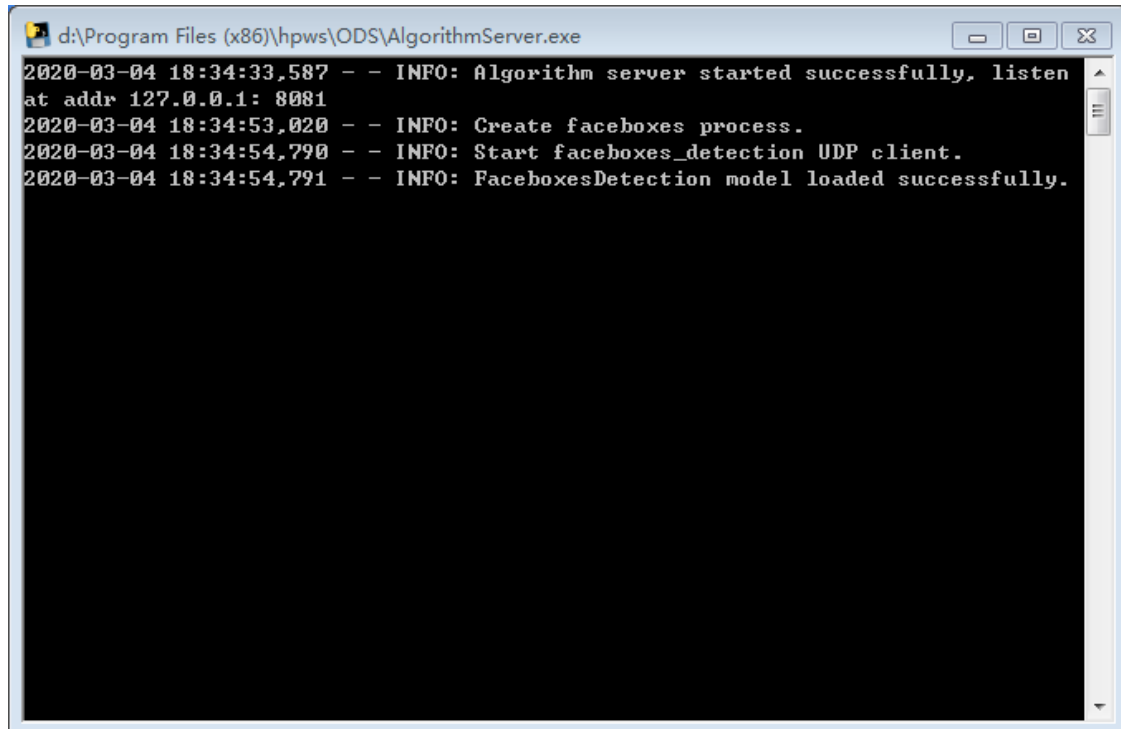
You can obtain the client-side temperature measurement software through the attached accessories or by contacting technical support or sales personnel.

Double-click to run the "HTS2000" software installation package and install the software as prompted. After the installation is complete, an icon will be displayed on



the desktop Double-click to run the "ODS_setup.exe" software installation package and install the software according to the interface prompts. After installation, open the installation directory. Double-click "AlgorithmServer" to start the face recognition algorithm server. Win10 system please run as administrator.

After startup is as follows.

A screenshot of a Windows command prompt window titled 'd:\Program Files (x86)\hpws\ODS\AlgorithmServer.exe'. The window shows the following log output:

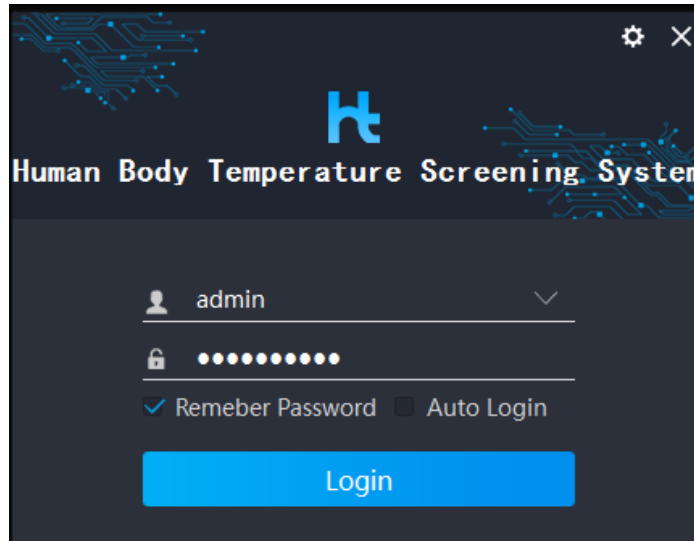
```
2020-03-04 18:34:33,587 - - INFO: Algorithm server started successfully, listen at addr 127.0.0.1: 8081
2020-03-04 18:34:53,020 - - INFO: Create faceboxes process.
2020-03-04 18:34:54,790 - - INFO: Start faceboxes_detection UDP client.
2020-03-04 18:34:54,791 - - INFO: FaceboxesDetection model loaded successfully.
```

(2) Client login

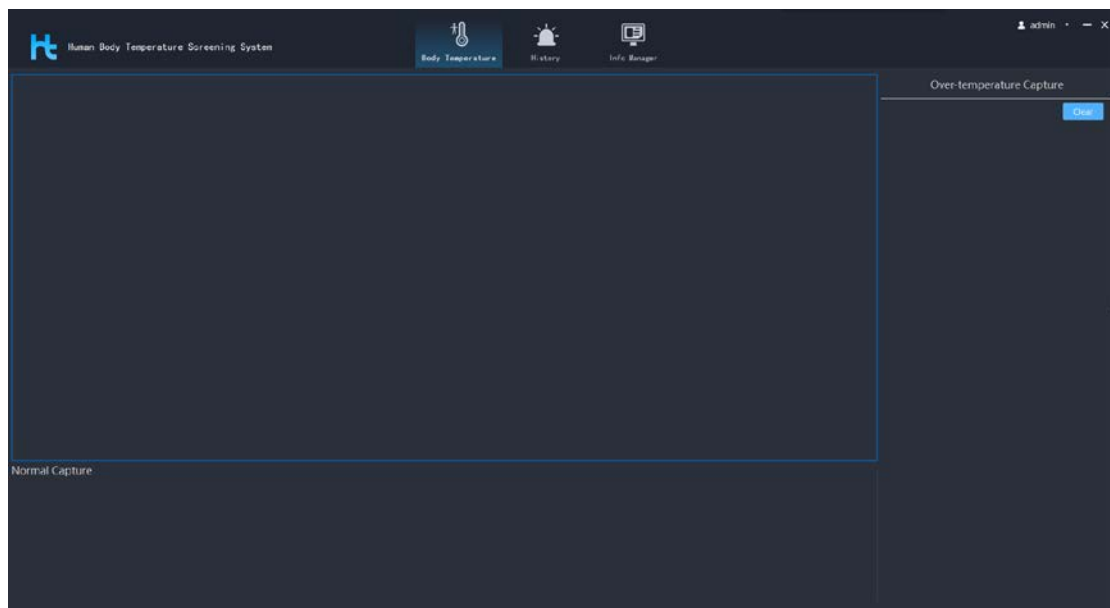
Double-click the software shortcut to bring up the login interface, and enter your username and password to log in.

User Name: admin

Password: Abc.12345



Enter the main interface after login



(3) Video Manager

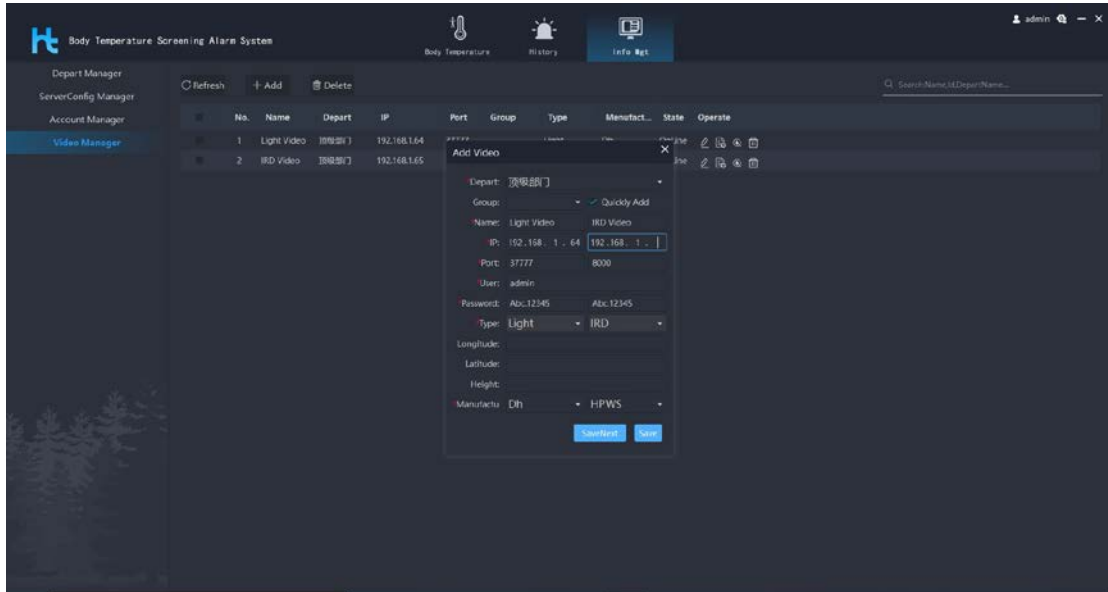
Enter the "Video Manager" interface, click the "Add" button, pop up the Add Device Information box, enter the device IP, User, Password, and click Save to complete the device addition. Click the "Delete" button to delete the device.

Default IP address for visible camera: 192.168.1.64

Default IP address for Thermal camera: 192.168.1.65

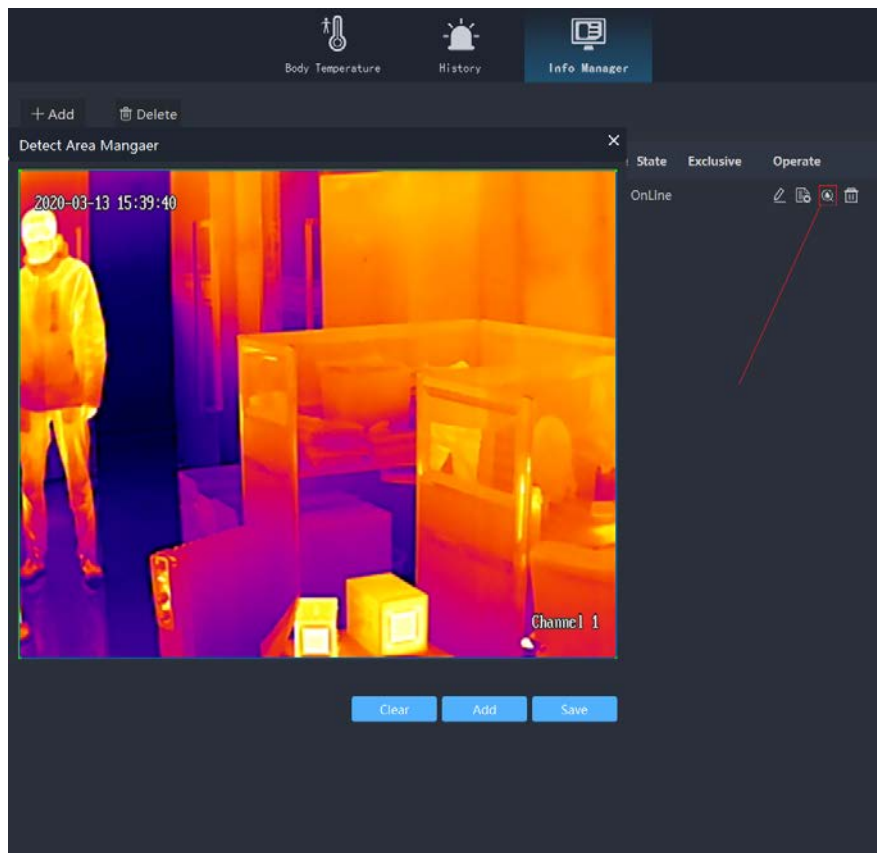
User: admin

Password: Abc.12345



(4) Detection area

Click the "📏" icon on the right side of the device to pop up the detection area drawing window. After drawing the detection area with the left mouse button, click Save.



(5) Body Temperature

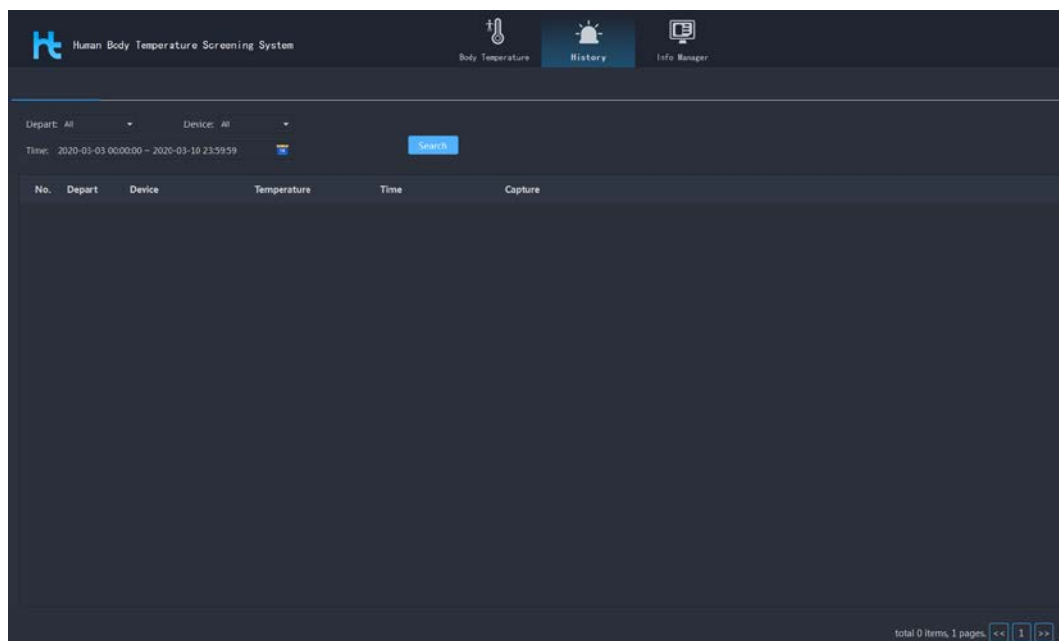
Enter the "Body Temperature" interface. After the device is online, it will automatically connect to the video.

The temperature detection interface has two parts, the left side displays the real-time video and the right side displays the alarm information. The alarm information includes: alarm time, partial cutout of the alarm, and alarm temperature.



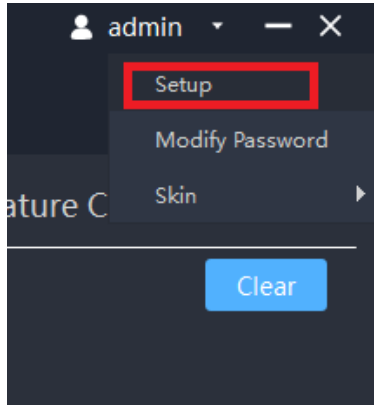
(6) Alarm record query

Enter "History", you can search and view the alarm log by time range.



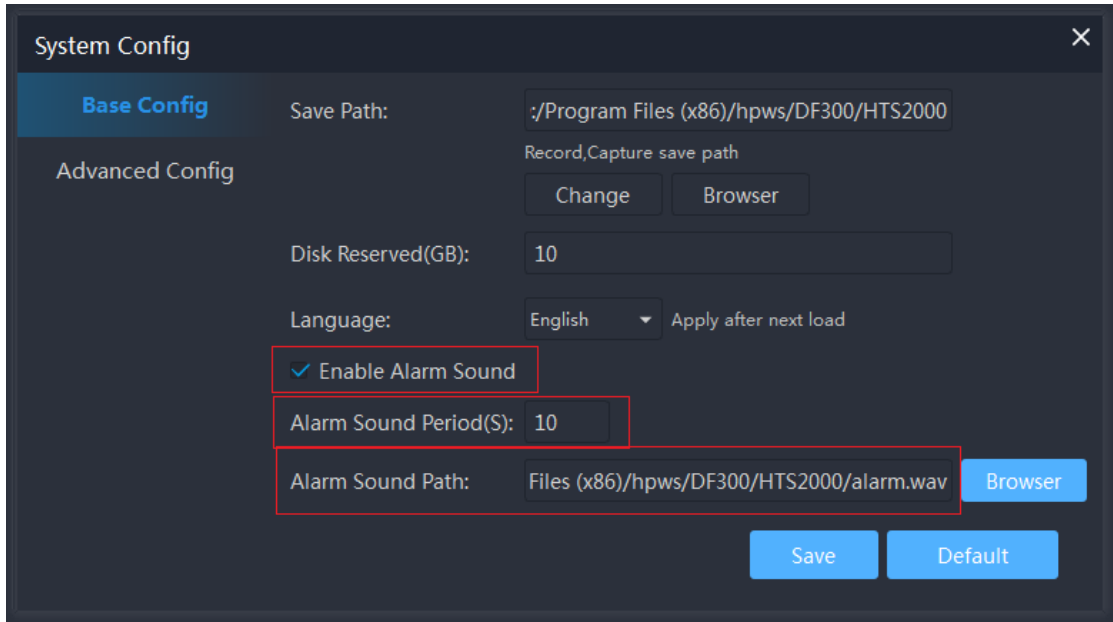
(7) Alarm configuration

As shown in the figure, click "Setup" to enter the configuration interface.



1) Configure the alarm capture path: Enter the "Base Config" interface, select the appropriate storage path, and click Save.

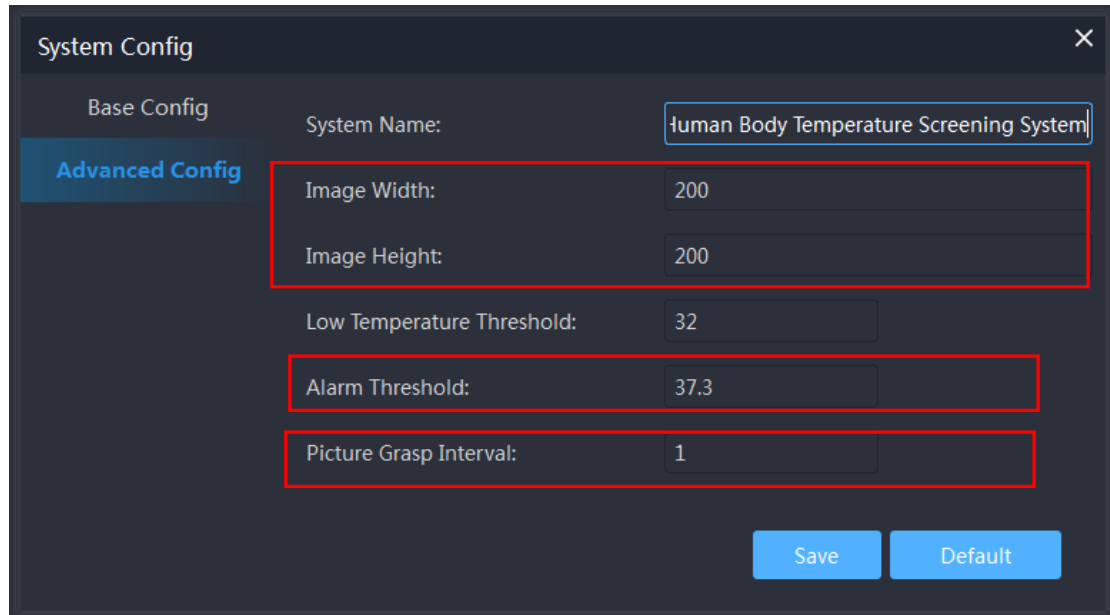
2) Enable alarm sound reminder: Check the box before "Enable Alarm Sound" to enable the alarm sound reminder, configure the alarm duration, and modify the alarm sound duration. The alarm audio can select the system default file or a custom file. When selecting a custom file, you need to put the file in the software installation directory and configure it for selection.



3) Configure the partial cutout size of the alarm: Enter the "Advanced Config" interface, modify the "Image Width" and "Image Height", and click Save. It can be adjusted to an appropriate value according to actual needs.

4) Configure the alarm temperature threshold: Enter the "Advanced Config" interface and configure the alarm threshold. The default is 37.3 ° C. When the detected temperature is lower than this threshold, it is regarded as normal, and the

detected temperature is marked with green. When it is detected that the human body temperature exceeds the threshold, it is regarded as a fever alarm. The alarm sounds and the temperature is marked with red.



The image shows a 'System Config' dialog box with a dark background. It has a title bar with 'System Config' and a close button (X). On the left, there are two tabs: 'Base Config' and 'Advanced Config'. The 'Advanced Config' tab is selected. The configuration fields are as follows:

Field	Value
System Name:	human Body Temperature Screening System
Image Width:	200
Image Height:	200
Low Temperature Threshold:	32
Alarm Threshold:	37.3
Picture Grasp Interval:	1

At the bottom right, there are two buttons: 'Save' and 'Default'.

Chapter 5 Warranty and After sales

1. Customer satisfaction is what we've been pursuing all along and quality is what brought our company prosperity. The night vision cameras manufactured by our company integrates independent technology and unique design.
2. If you have any suggestions either for our product or services, contact us. We'll do our utmost to improve and offer you the customized system you need.
3. All of our cameras are packed with detailed user manuals, we may also assist with the installation and debugging if it is feasible.
4. If any problems such as quality, technology and operation occur during operation, our company will give you our quickest response.
5. Your suggestions are valuable and your support will be our driving force. Thank you!