

Notice: For any technical improvement, we will specify in the latest user manual.
特别声明：产品若有技术改进，会编进新版说明书中。



CA 1889系列 USER MANUAL

Thank you for choosing our product. Please thoroughly go through user manual before operation and keep it well for future reference. All photos here are for reference only, and specifications are subject to the physical product.

感谢您购买本产品，请在使用前阅读此说明书，阅读后请小心收藏，以备日后查阅。图片仅供参考，产品以实物为准。

Introduction

The Camera serves as a high-performance and hand-held IR thermal imager. It features 307,200/120,000 effective IR pixels, lasers, flashlights, and visible light of 5 million pixels. It can be connected to various devices, such as a PC, an SD card, and an HDMI display, meeting the photographing requirements in different applications.

Notice

This manual is for general purposes. It covers multiple thermal imagers in a product line. This means that some functions and descriptions herein do not apply to the specific model of your thermal imager.

FCC Caution

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: 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.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

Precautions

Always observe the following precautions:

When operating the device, keep it stable if possible to avoid violent shaking.

- Do not use or store the instrument at a place with the operating or storage temperature beyond the allowable range.
- Do not align the device directly with high-intensity thermal radiation sources, such as the sun, a laser and a spot-welder.
- Do not expose the device to the dusty or humid environment.

When using the device in an environment with water, do not splash water on it. When the device is not in service, cover the lens cap.

- When the device is not in service, put it and its accessories in the dedicated packing box.
- Do not block the holes on the device.
- Do not beat, throw or shake the instrument and its accessories to ensure intactness.
- Do not disassemble the device by yourself. Otherwise, you may damage the device and void your warranty.
- Do not use the accompanying SD card for other purposes.
- Do not use the device at a place with the operating temperature beyond the specified value. Otherwise, the device may be damaged.
- Do not use deliquescent or equivalent liquid for the device and cables. Otherwise, the device may be damaged.
- After the eyepiece is used for long time, its contrast will be lowered, and the scene will be whitened. You can switch to the LCD display, and switch back to the eyepiece some time later.

This device is powered by a rechargeable lithium battery. To use the battery safely, observe the following items:

- Do not attempt to open or disassemble the battery in any event.
- Do not put the battery in a high-temperature environment or close to a high-temperature object.
- Do not short-circuit the battery.
- Do not put the battery in a humid environment or in water.
- If the battery leaks and some leaked liquid gets into eyes, flush the eyes with clean water immediately, and go for medical care.

• Charge the battery as specified in this manual, and follow the charging steps and precautions. Otherwise, the battery may be heated or damaged, or cause personal injuries.

When wiping the device, take the following measures:

- Non-optical surfaces: Wipe the non-optical surfaces of the thermal imager with a piece of clean and soft cloth when necessary.
- Optical surfaces: When using the thermal imager, do not dirty the optical surfaces of a lens. Especially, do not touch the lens with your hands. Otherwise, the sweat on hands will generate marks on the lens, and may even corrode the optical coating on the glass surface. When the surfaces of the optical lens are contaminated, wipe them carefully with dedicated lens paper.

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Chapter 1

List of Items

Standard parts:

Thermal imager, Lithium battery, Adapter, Adapter plug (5 pcs), SD card (16 GB), Shoulder harness, USB cable, HDMI cable, Network cable, Quick operation guide, User manual, Desktop charger (depending on the product model), CD-ROM, Carrying bag, Parts list

Optional parts:

Bluetooth headset, HDMI-to-analog video converter

List of Items

Standard parts:



Thermal imager



Lithium battery



Adapter



Adapter plug
(5 pcs)



SD card (16G)



Shoulder harness



USB cable



HDMI cable



Network cable



Quick operation
guide



User manual



CD-ROM



Carrying bag



Parts list

List of Items

Optional parts:



Bluetooth headset



HDMI-to-analog video converter



The tele lens



The wide angle lens



The High temp Filter

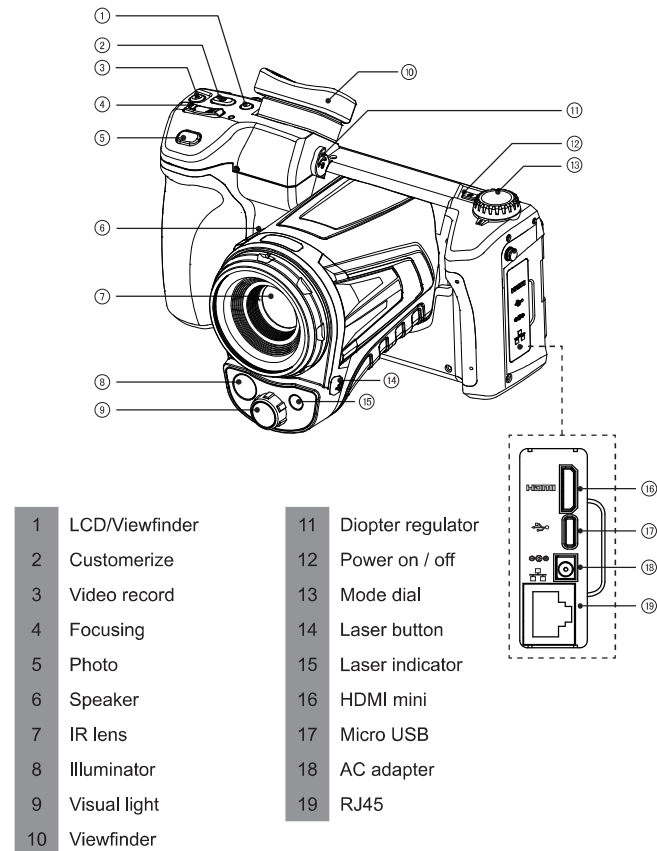


Desktop charger
(depending on the
product model)

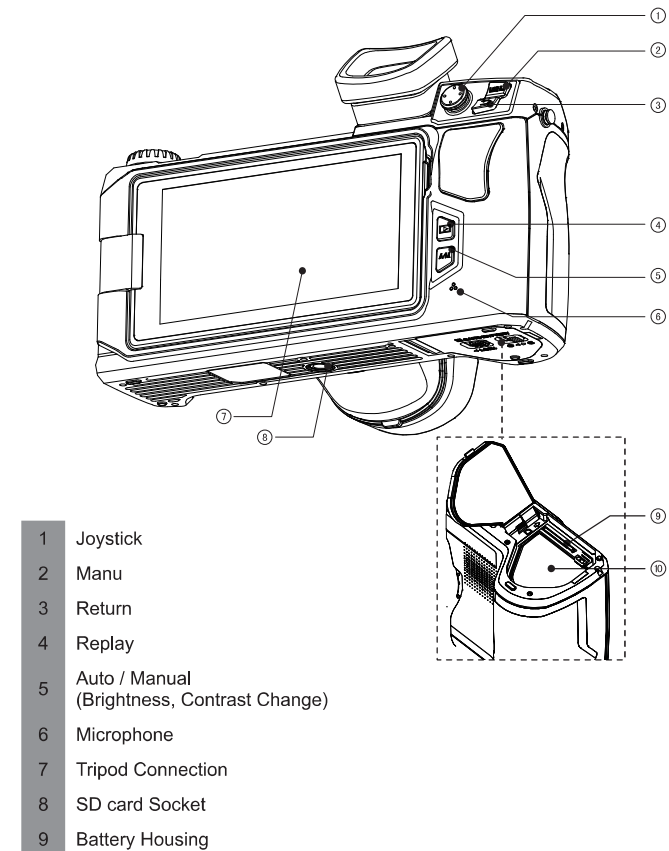
Chapter 2

Product Components

Product Components



Product Components



Chapter 3

Areas of the Imager

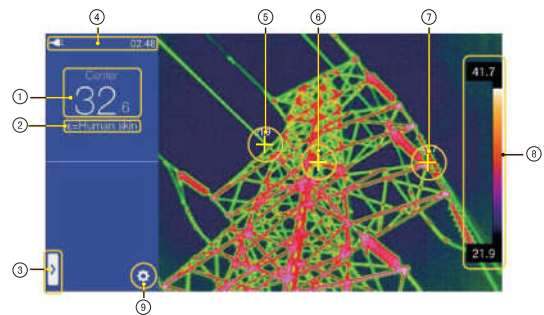
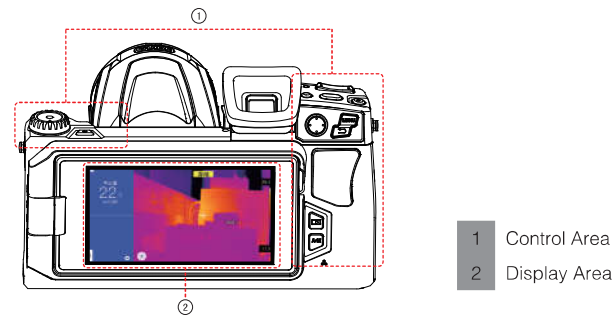
Introduction to each area

Main replay screen

Short-cut menu

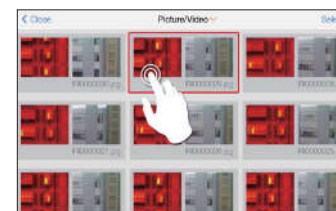
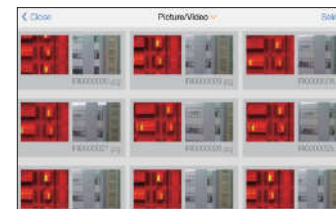
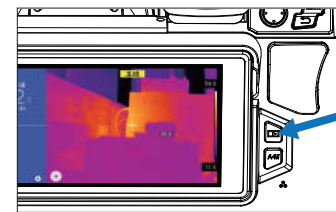
Areas of the Imager

A Introduction to each area

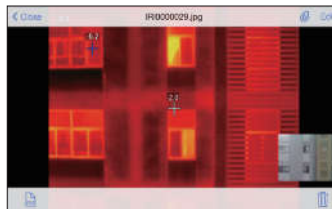


Areas of the Imager

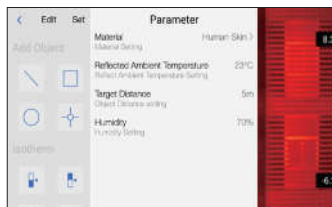
B Main replay screen



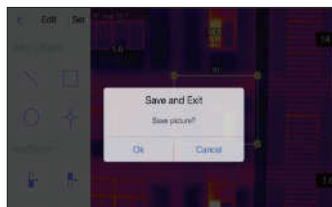
Areas of the Imager



4. View the image information.



5. Click the "Edit" button in the upper right corner or the "Parameter" button to display an area for editing the analysis object.

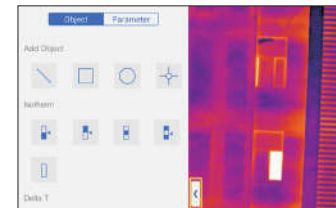


6. Modify the temperature measurement image. Before you exit from the screen, a dialog box is displayed, showing "Are you sure to save the modification?" Click the "OK" button to save the modification, and exit from the screen.

Areas of the Imager

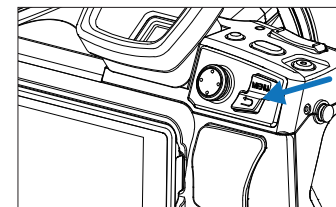
C Short-cut menu

This screen mainly involve short-cut operations which can be performed in real-time scenes, including image analysis, thermometric analysis, parameter modification, quick start of wireless AP and LAN, automatic photographing, and automatic recording.



Navigating to the short-cut menu

- In the real-time scene state, press the physical button "MENU" on the imager, or click the ">" button in the lower-left corner of the touch screen to display the short-cut menu screen.



Return button

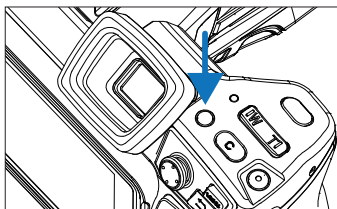
- Press the "Return" button or click the "<" button to exit from the short-cut menu and return to the real-time screen.

Chapter 4

Observation

Switching the eyepiece
Switching the image mode
Temperature measurement
Manual/automatic focusing
Electronic zooming

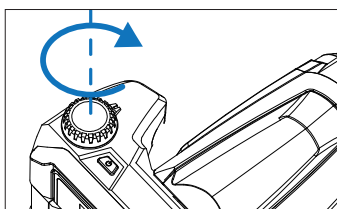
Observation



("Switch LCD/eyepiece" button)

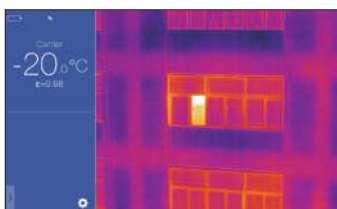
Switching the eyepiece

- After power-on, the LCD display shows the main screen by default. Press the "Switch LCD/eyepiece" button to disable the LCD display and enable the eyepiece immediately. Press the "Switch LCD/eyepiece" button again to enable the LCD display and disable the eyepiece.



Switching the image mode

- Rotate the mode dial in the upper-left part of the imager to switch the image mode among the following four modes:



A. Picture-in-picture

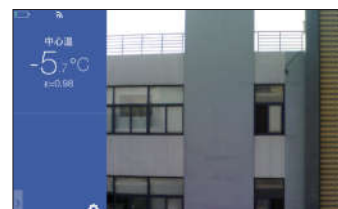
- Switch to the PIP identification mode.

Observation



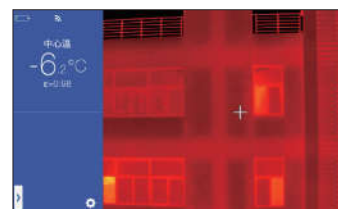
B. MIF

- Switch to the MIF identification mode.



C. Visible light

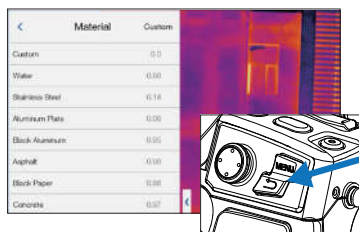
- Switch to the VL identification mode.



D. IR

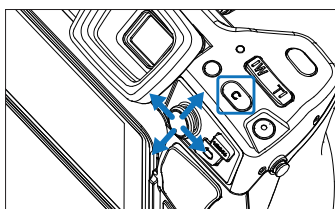
- Switch to the IR identification mode.

Observation



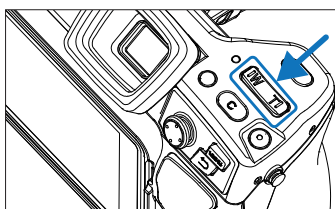
Temperature measurement

• In the real-time image state, choose "Shortcut menu" → "Parameter" → "Materials setting" to select the emissivity for the target. Press the "Return" button or click the "<" button to return to the real-time screen, and then align the center point cursor with the target to measure the temperature.



Manual/automatic focusing

• Press the "Up"/"Down" button to conduct far/close focusing adjustment.
• Set the function of customization button "C" to automatic focusing ("System setting" → "Button customization" → "Automatic focusing"). For details, see the section "Button customization". Align with the target, and press the customization button "C". A few seconds later, conduct automatic focusing until completion.



Electronic zooming

• Press the physical buttons "W" (zoom in) and "T" (zoom out) on the imager to conduct digital zooming operations.



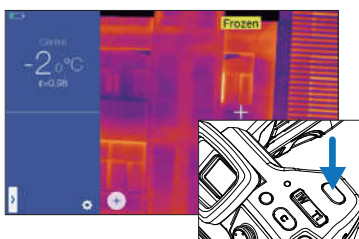
Chapter 5

Photographing

Photographing
Automatic photographing
Add notes
Record videos

Photographing

In the real-time scene state, press the "Photographing" button on the imager to freeze a scene, take a photo, and save it in the current scenario. Choose "System setting"→"Photographing setting", and then directly set the function of the photographing button to photographing for one-click photographing.

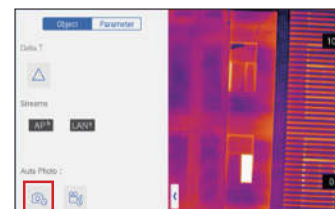


1. Press the "Photographing" button on the imager once to freeze a scene, as shown in the figure below.



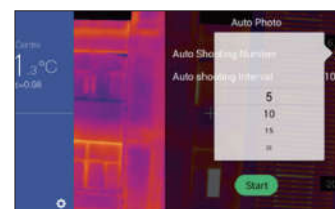
2. When the scene is frozen, press the "Photographing" button again to save the frozen image automatically.

Automatic photographing



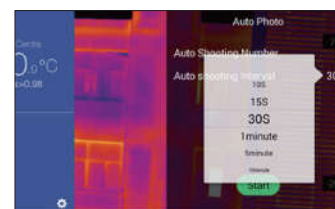
Setting automatic photographing

• In the real-time image state, choose "MENU"→"Automatic photographing", and navigate to the time fixed photographing button. Click the rear-right area to display the screen for setting automatic photographing parameters.



Setting the number for automatic photographing

1. Click the number for automatic photographing option to select a specific number.
2. Click the "Start" button to boot the time fixed photographing program based on the preset number for time fixed photographing.

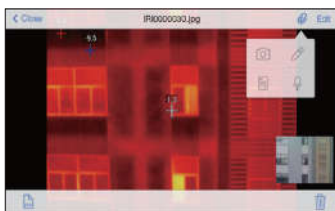


Setting the interval for automatic photographing

1. Click the interval for automatic photographing option to select an appropriate interval.
2. Click the "Start" button to boot the time fixed photographing program based on the preset time interval.

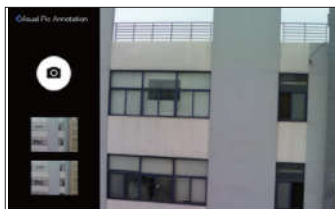
💡 This function is available for partial models only

Add notes



Add notes

1. Press the "Replay" button on the image to display the directory for browsing files.
2. On the touch screen, click and choose the original image to be added with notes, and preview it.
3. Navigate to the single image browsing screen, and then click the attachment icon in the upper-right part to display the short-cut menu for add notes.



Add photographing notes

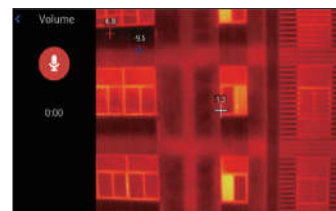
1. Click the photographing notes addition button to display the main screen for photographing notes.
2. Click the photographing button to take at most two visible light photos, as shown in the figure below.



Add text notes

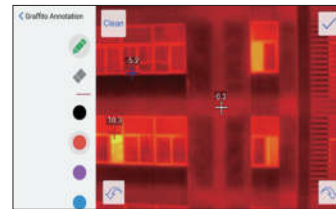
1. Click the text notes addition button.
2. Change to the area for inputting text notes, and then input effective notes, such as XXXX.
3. Click the button in the upper-right corner to save the text notes.

Add notes



Add voice notes

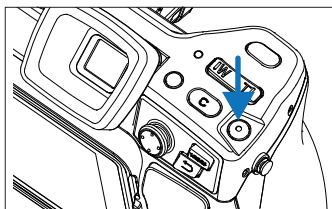
1. Click the voice notes addition button to display the voice notes screen.
2. Click the recording button to start recording.
3. Click the Stop button to stop recording and save the record file. The system can make a record for 60s at most, as shown in the figure below.



Add graffiti notes

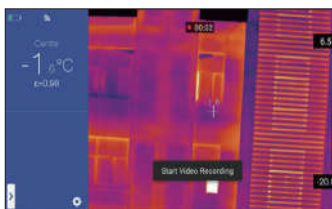
1. Click the graffiti notes addition button to display the graffiti screen.
2. The left buttons are paintbrush, eraser and color selection buttons successively. You can choose any function before conducting graffiti operations in the image areas directly.
3. The four functional buttons in the right scene are "Clear", "Save", "Cancel" the previous operation" and "Recover" buttons respectively from left to right. You can conduct operations to the image areas by pressing these buttons.
4. Click the button to save the graffiti data. Click the "Clear" button to clear the current graffiti operation. Click the button to restore the previous graffiti operation. Click the button to recover operation.

Record videos



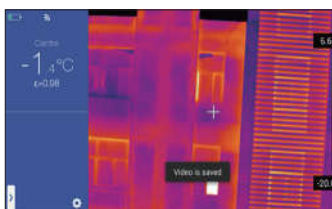
One click recording

- In the real-time image screen, focus on the target. (Before shooting a clip, conduct automatic focusing or manual focusing.)
- Press the "Record" short-cut button on the imager.



Start recording

- The record timing information begins to be displayed in the upper-right corner.



Stop recording

- Press the "Record" button again to end recording and save the video data. (To view the recorded clip, press the "Replay" short-cut button to skip to the replay screen.)

Record videos

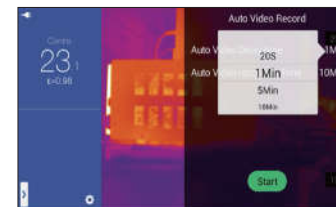
Setting the time fixed video recording (provided for some models only)

In the real-time image state, press the "Menu" → "Automatic photographing" buttons successively to find the time fixed video recording button.

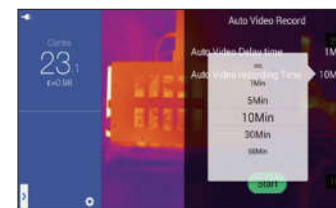


Setting video recording

- Click the time fixed video recording button to record videos automatically according to the preset video recording interval, with the recorded videos in mp4. You can view the saved videos in the photo browsing screen. At the same time, you can also press the physical buttons on the imager to record videos. See the figure below.

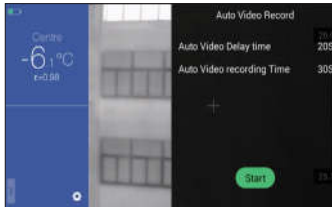


- Record delay setting**
Choose a customized value through the scroll box.



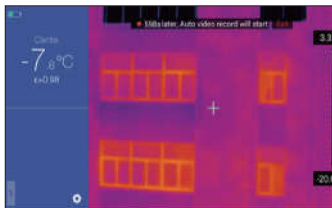
- Setting record duration**
• Choose an appropriate value through the scroll box.

Record videos



Starting time fixed video recording

- Click the Start button in the lower part.



Stopping video recording and photographing

- Click the "Exit" button in the upper-right part of the screen to stop recording.



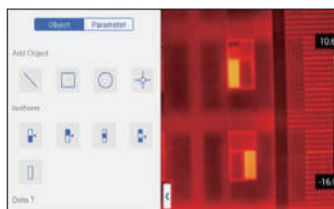
Chapter 6

Analysis

Real-time analysis
File browsing
Photo analysis
Isotherm
Emissivity customization

Real-time analysis

Analysis object addition/deletion



1. Click the  icon in the lower left corner to enter the analysis object addition menu screen in the real-time scene as shown in the photo below.

- Multiple analysis objects are provided, such as line, rectangle, circle and point. At the same time, maximum temperature, minimum temperature and average temperature displays as well as display in the middle can also be customized as shown in the photo below.



2. Hold any analysis object on the touch screen, and then the system will pop up an object menu automatically, with its functions shown below.

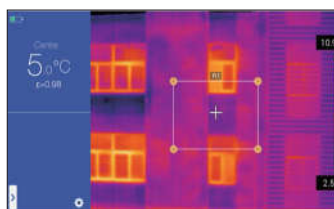
- Marking: Control the temperature markings (maximum temperature, minimum temperature and average temperature) to be displayed.

- Marked temperatures: Display the maximum temperature, minimum temperature and average temperature in the analysis object areas.

- Middle: Control whether to display the analysis object in the middle.

- Deletion button: Touch to press the  button in the edition screen to delete the current analysis object.

Analysis object size change



1. Choose any one analysis object and mark it with  if all its nodes are chosen and yellow.

2. Move any one node to change the range of the analysis object.

Real-time analysis

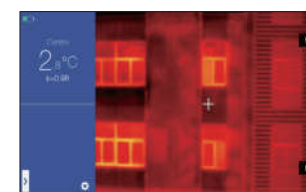
Palette switch

1. Enter the main screen to click the right palette area in the screen, and then the system will pop up some palette options, including Candescence, Lava, Brilliance, Rainbow, North pole, Hot Iron, Stratification, Medical, Red Trace and Black Heat. (Less palette options provided for some models)

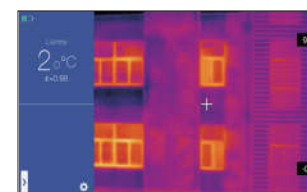
2. The user can switch various color band models freely as shown in the photo below:



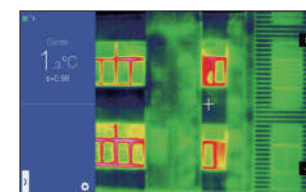
Candescence



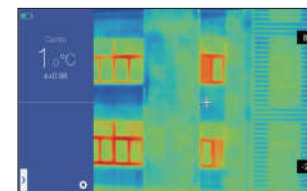
Lava



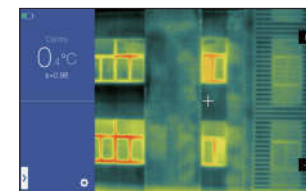
Brilliance



Rainbow

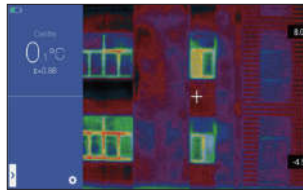


North pole

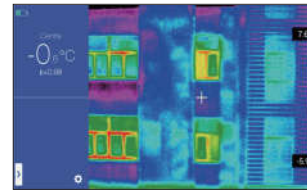


Hot Iron

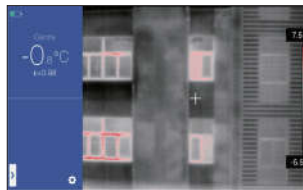
Real-time analysis



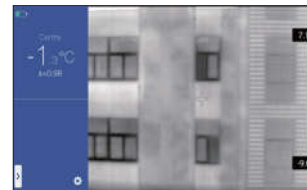
Stratification



Medical



Red Trace



Black Heat

Real-time analysis

Manual brightness/contrast adjustment

1. Press the Menu button to open the menu option in the real-time scene state.
2. Press the lock button  in the lower right part of the imager gently to lock both maximum and minimum color band temperature values in the real-time video scene.
3. Click the maximum or minimum temperature to pop up the corresponding value menu in the system automatically as shown in the photo below (Lock the temperature).
4. Choose an appropriate high or low temperature value first, and then click any area in the scene to save the temperature value and redisplay the new result.



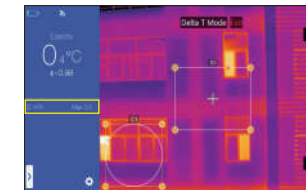
Lock the temperature

Temperature difference analysis

1. Add at least 2 analysis objects first, and then click the temperature difference button under the object tag to activate the temperature difference mode.
2. Temperature difference analysis: Choose at least 2 analysis objects for temperature difference analysis, and then relevant data will be displayed in the left data field automatically.
3. Exit the temperature difference analysis mode: Enter the short-cut menu-temperature difference function and click the activated temperature difference icon  again to exit the temperature difference state.

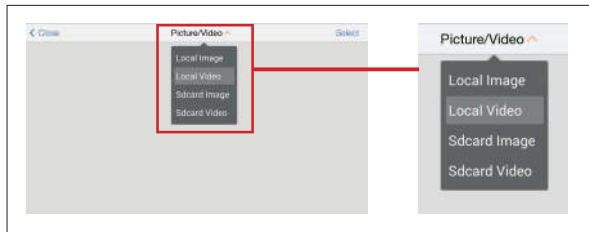


Prior to temperature difference analysis



After temperature difference analysis

File browsing

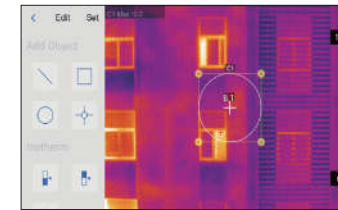


1. Local photos. Press the "Replay" button to enter the main file browsing screen, and then click "Photos"—"Local photos" successively to display all the locally stored photos in the system automatically.
2. Local videos. Press the "Replay" button to enter the main file browsing screen, and then click "Photos" – "Local videos" successively to display all the locally stored videos in the system automatically.
3. Photos stored on the SD card. Press the "Replay" button to enter the main file browsing screen, and then click "Photos"—"Photos stored on the SD card" successively to display all the photos stored on the external SD card in the system automatically.
4. Videos stored on the SD card. Press the "Replay" button to enter the main file browsing screen, and then "Photos"—"Videos stored on the SD card" successively to display all the videos stored on the SD card of the user in the system automatically.

Photo analysis

Edit a photo

1. Click any photo in the photo preview screen to enter the photo edition screen.
2. Click the  button to pop up a notes menu in the system automatically, and then add voice notes, text notes, etc. to the current photo.
3. Click the "Edit" button to conduct analysis object addition and modification, isotherm modification and temperature difference modification to the current photo.



Edit the analysis object

4. Click the "Parameter" button to modify other attributes and save the settings after exit as shown in the photo below.

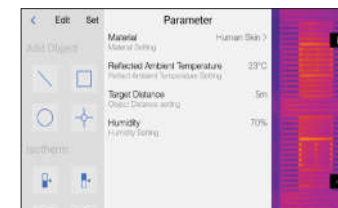
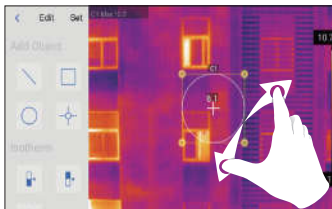


Image attributes

Photo analysis

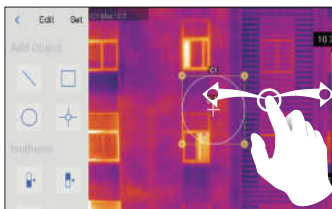
Zoom in and out an image



- Touch the screen with two fingers in the photo edition mode, and then spread on the screen.
- Spread to zoom in an image by up to 10 times.



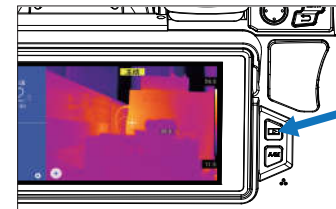
- Pinch to zoom out an image.



- Slide a single finger on the touch screen to move and zoom in an image.

Photo analysis

Create a PDF file



1. Press the "Replay" button to enter the photo browsing screen.



2. Click the "Choose" button to choose at most 5 images freely as shown in the photo below.

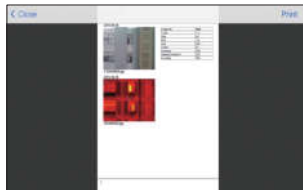


3. Click the "PDF" button in the lower left corner to generate a PDF preview file.

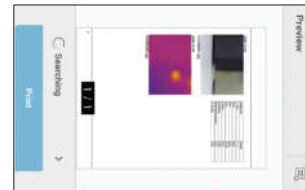
Photo analysis

Print a PDF file

1. Connect the wireless printing network (wireless printing) on the system setting-connection setting screen.
2. Enter the replay screen, and choose an image to printout a PDF file. For more details, please see the chapter "Generate a PDF file".
3. Touch to press the "Print" button in the upper right part of the PDF preview screen.



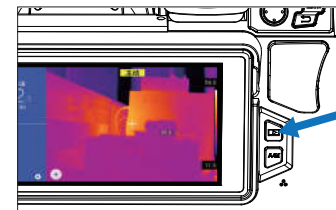
PDF print



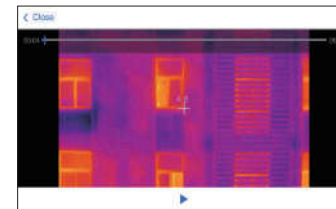
Print Preview

Photo analysis

Replay a video

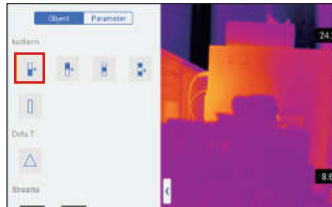


1. Enter the photo replay screen, click 'Photos' "Local videos" to enter the local video screen successively and then choose a video clip in MP4.



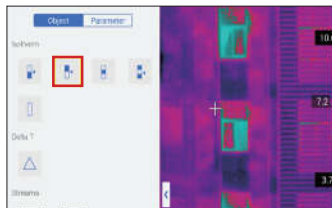
2. Replay the clip
 - Click the "Play" button in the middle of the screen to play the clip.
 - Click the screen to display the clip replay panel.
 - Click the "Pause" button at the bottom of the screen to pause the clip while the short video is played.

Isotherm



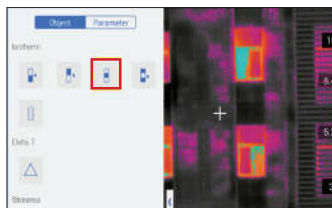
Downward isotherm

1. Call out the main menu with the physical Menu, and then slide the object screen down to the isotherm column with a single finger.
2. Touch to click the  icon in the isotherm column, and then the target scene is in the downward isotherm image mode as shown in the photo below.



Upward isotherm

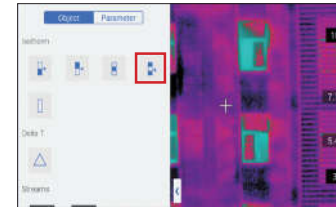
1. Call out the main menu with the physical Menu.
2. Click the  icon to enter the upward isotherm real-time video image mode as shown in the photo below.



In-range isotherm

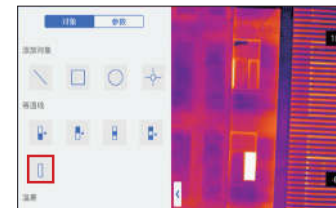
1. Call out the main menu with the physical Menu.
2. Click the  icon to enter the inrange isotherm image mode as shown in the photo below.

Isotherm



Out-range isotherm

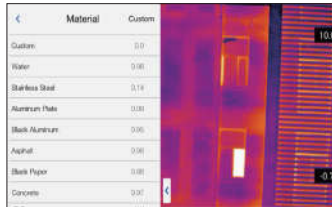
1. Call out the main menu with the physical Menu.
2. Click the  icon to enter the out-range isotherm image mode as shown in the photo below.



Cancel the isotherm

- Click the  icon in the analysis object menu option to close the isotherm display as shown in the photo below.

Emissivity customization



1. Click it to enter the menu-parameter screen, and then choose the "Materials" option where multiple presetting items are provided at present as shown in the photo below.



2. Customize parameters as required within 0.01–1.00 by sliding the corresponding values, and then click the "<" button in the upper left corner to exit it and save the modification as shown in the photo below.



Introduction to the parameters to be customized:

Reflected temperature: The user can modify the parameter as required within 0–100.

Target distance: The user can modify the parameter as required within 0–100.

RH: The user can modify the parameter as required within 0–100%



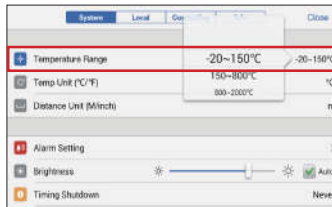
Chapter 7

Global Setting

System Setting
Local Setting
Connection Setting
About Update

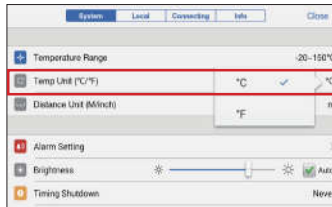
System Setting

On the real-time video screen, click . Then enter into the global setting screen, in which alter the main parameters for system, including unit of temperature and distance, brightness, network connection, data & language and E-mail configuration.



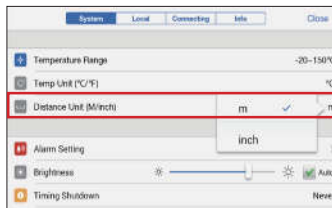
Temperature measurement range

- Set thermometry range for measured targets.
(provided for some models only)



Temperature unit switchover

- Switch unit between Centigrade °C and Fahrenheit °F.
(Centigrade °C by default °F)



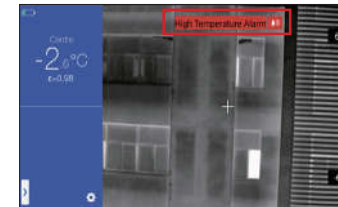
Distance unit switchover

- Switch between Meter and Foot.
(Meter by default)

System Setting

Warning setting

Manage the temperature and range for warning (Inactive state by default). Obtain warning temperature range in Temperature Measurement Range. The warning temperature range is Low/High. Warning temperature is in the scope that temperature measurement range is -20~150°C.



High temperature warning

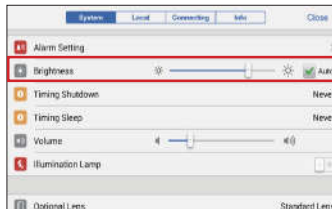
1. Open temperature warning switch, set the warning temperature range as "High" (setting value: -20°C).
2. Return to the real-time temperature measurement screen, and the machine will immediately give an alarm by sound.
3. Click  to close the sound, as follows:



Low temperature warning

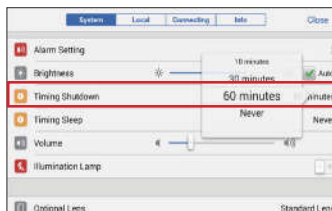
1. Start temperature warning switch, set the warning temperature range as "Low" (setting value: 30°C)
2. Return to the real-time temperature measurement screen, and the machine will immediately give an alarm by sound.
3. Click  to close the sound, as follows:

System Setting



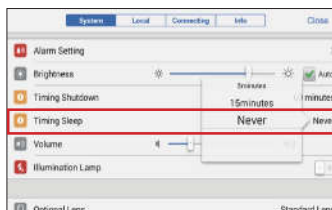
Brightness

- Adjust brightness for touch screen automatically or manually.



Timed shutdown

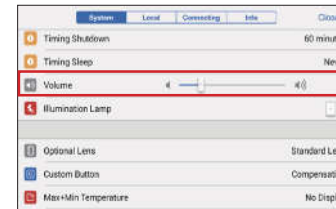
- Set "Timed shutdown" (Never by default). Five choices: 5 Minutes, 10 Minutes, 30 Minutes, 60 Minutes and Never.



Timed Hibernation

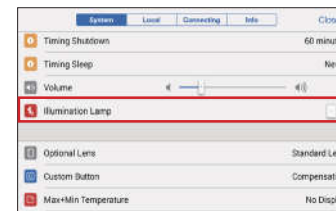
- Set "Timed Hibernation" (Never by default). Four choices: 1 Minute, 5 Minutes, 15 Minutes and Never.

System Setting



Sound volume

- Regulate sound volume or mute.



Flashlight

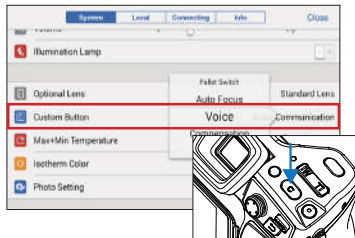
- Turn on/off flashlight (Off by default).



Extension lens

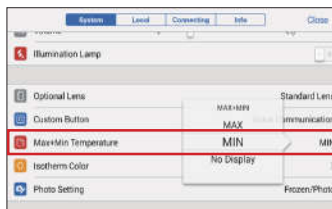
- Set the extension lens manually (Normal lens by default).

System Setting



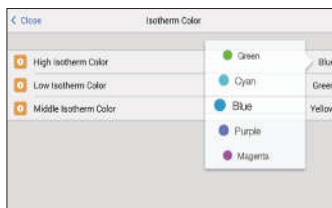
Custom key

- Set imager's user-defined shortcut for operation, including flashlight, palette bring-up, auto-focusing and compensation.



Full figure of temperature tagging

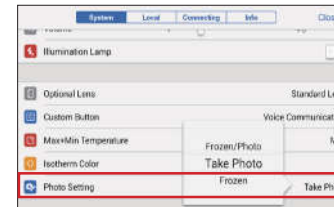
- Manage High/Low temperature tracking mode in real-time screen. The default is not to display (shut down the tracking).



Color of isotherm

- Customize the color for high, low and in-range isotherm.

System Setting



Photographing setting

- Set camera button to operate, including Freeze/Photographing, Photographing and Freeze.

Local Setting

Report setting

- Modify all parameters for PDF report, including its logo, header, footer and model selection (provided for 3 preset models)



Report setting

Time/date

- Set the time and date for system manually.

Language

- More than one language choices.

Watermark

1. Turn on part watermark selections in the watermark setting: Logo, Date, Emissivity, GPS, Location, etc.
2. Return to the real-time scene and take a sample photo.
3. Press replay short-cut, enter into picture browsing screen and preview the sample photo.
4. All enabled watermark information will display at the bottom of preview file.



Watermark



Preview of watermark

Connection Setting

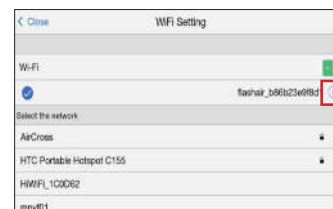
WIFI

- on the top of main screen means that the device has connected to WLAN.
(Enable/disable WIFI module functions)



1. Select network: click a listed one and input passwords if needed.

Access the enclosed WLAN: click "Others" and input the name of enclosed WLAN. Network name, safety type and passwords are all indispensable.



2. Enter into connection screen after proper passwords input.



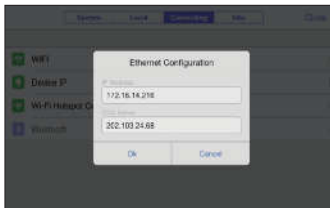
3. Click (More Information button), enter into the WIFI address setting screen, in which the User can select STATIC tag and modify IP address.

Ignore network: click (More Information button) next to the connected network and choose "Ignore Wireless Network".

Connection Setting

Device IP setting

The User enables to customize address for IP and DNS server.



1. IP address: input effective IP address, such as 172.16.14.216 and DNS server address 202.103.24.68 (the User defines them based on own LAN status)



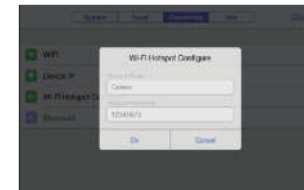
2. Host IP setting: set local IP address as "172.16.14.230" and DNS as "202.103.24.68" for desktop, then use it with accompanying software*.

***Need to be used with PC application software.**

Connection Setting

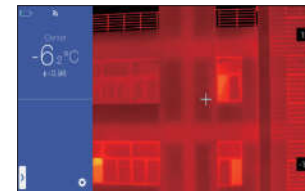
WIFI hotspot configuration and connection with APP

1. Enter into Global Menu– Connection Setting–WIFI Hotspot Configuration Tag.
2. On the configuration screen, input effective hotspot name "Camera", passwords "12345678", and click "OK" to save.

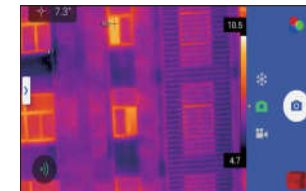


WIFI Hotspot configure

3. Return to main screen of real-time scene, touch to press > (short-cut menu button) at the left bottom, select and enable AP.
4. With AP enabled, Activated State will be displayed in taskbar of main screen.
5. After enabling AP function, the User may input proper SSID and Passwords in mobile APP to connect with WIFI. (**SSID=Camera, passwords=12345678**)
6. Connect with APP: open and connect with WIFI hotspot in Android/Iphone mobiles, and input above SSID and passwords for a success connection.
7. Run the App: APP will be connected and display real-time scene.



AP connection is successful



APP connection is successful

Notice: after every click for short-cut of Global Menu, AP will close automatically. The User needs to open it again in the main menu screen of real-time scene.

Connection Setting

Bluetooth headset pairing

1. Enable Bluetooth headset, press talk-listen button for 3 seconds to turn on pairing mode. (The blue indicator light will be on and last for 3 minutes.)
2. Enter into System Setting-Connection Setting-Bluetooth headset: system will search Bluetooth devices automatically with Bluetooth setting enabled. Pair with the listed Bluetooth headset HM1900.
3. Once the pairing is completed, the Headset will reconnect it after every enablement.

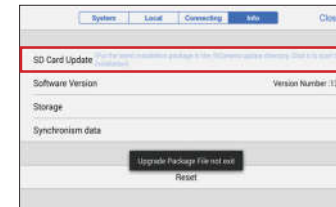


Open the bluetooth



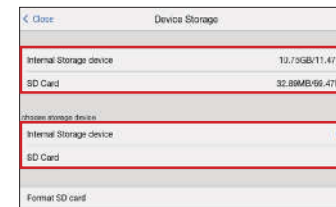
Matching success

About Update



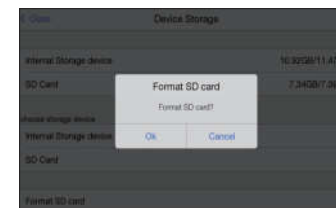
SD card upgrade

- Put the latest upgrade apk document into the directory of G Camera/update in external SD card. Click update button, there will have notice for normal/failure upgrade operation. After successful upgrade, the machine needs to restart.



Memory space

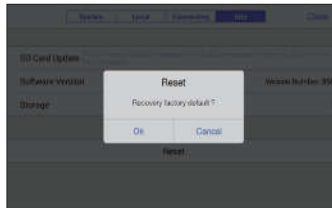
- It mainly indicates the left space of internal storage device and basic information of external SD card. Moreover, the User is able to set memory selection for imager internal storage and external SD card.
- Select memory medium: in the device storage screen, the User may select internal device or external SD card for data storage.



SD card formatting

- Formatting: select a storage card slot, and choose "Yes".
- Notice: formatting will delete all photos and data in storage card of the selected slot permanently. Before formatting, back up data according to needs.

About Update



Restore default

1. Enter into Setting Menu-Information-Restore Default, and click restore setting tag.
2. The machine will be reverted to factory defaults through this. (Be careful)



Chapter 8

Connecting With Peripheral Devices Setting

Diagram of Port Connection
Memory Card and Lens Installation
Outer Joins

Diagram of Port Connection

Diagram of Port Connection

This product may connect with peripheral devices by HDMI data line, USB data line and cable. (Illustrated)

Mini HDMI port

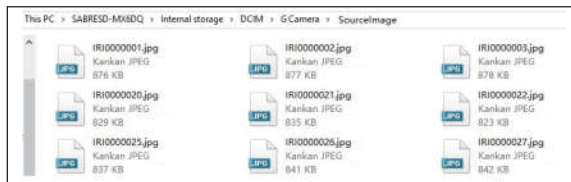
Mini HDMI port is mainly used to connect with external HD display under the precondition that the Display has HDMI port.

1. Connect HDMI cabin with thermal imager.
2. Make "HDMI" mark of Mini HDMI plug towards the front of device, and in--sert the plug.
3. Connect HDMI cabin with HDMI IN port of HD display.
4. Turn on HD display and switch video input to select connective port.

USB port

1. Check internal storage files.

Connecting USB data line with desktop, open "My Computer" to check internal memory disc, enter into "Internal Memory Device", find the pictures storage folder (Specific path: \SABRES--MX6DQ\Internal Storage Device\DCIM\G Camera\Source Image).



Notice: the folder name with "IRI": IR images; with "VIS": Visible light images.

2. Check SD card files.

Storing photos into SD card: enter into Global Setting--Information--Memory Space, and select the memory medium as SD card, then the files will be stored in SD card after next time photographing.

Diagram of Port Connection

Connecting USB data line with desktop, open "My Computer" to check internal memory disc, enter into "Internal Memory Device" (Path: \SABRES--MX6DQ\SD card\DCIM\G Camera\Source Image).



Notice: the folder name with "IRI": IR images; with "VIS": Visible light images.

LAN port

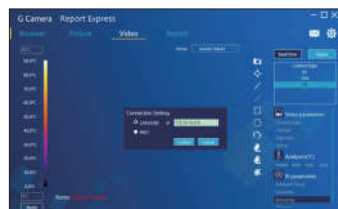
1. Internet access: connect the cable port of desktop with CA1889 series device's internet access in a normal state.
2. IP setting: enter into Global Menu--Connection Setting--Device IP, the User may adjust related parameters manually. Input proper address of IP and DNS (see details in the Section of Device IP Address).
3. LAN port access: enter into main screen of real--time scene, open menu selection, click **LAN** to enable LAN connection.



(Need to be used with PC application software)

Diagram of Port Connection

4. Connecting with application software: enable the Windows IR analysis software, enter into video analysis screen, choose model and input proper IP address.



5. Real-time scene display: connect with devices, and show normal real-time scene.



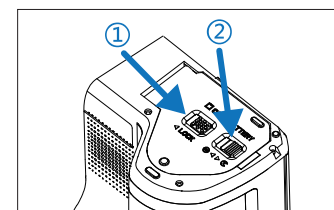
⚠ Open the live thermal video in the IR analysis software on PC/mobile terminal APP on by Wifi connection, if click the set button on the device, the live thermal video will disconnect. When you need use it on PC/mobile terminal APP, please connect again.

Memory Card and Lens Installation

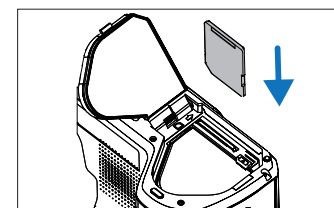
Supporting SD card: all photos and videos can be stored in local or SD card. The maximum capacity of supported SD card is 32GB, and standard configuration is 16GB. Supported SD card includes:
(1) Samsung: 16GB CLASS10, (2) SanDisk: 16GB CLASS10,
(3) Kingston: 16GB CLASS10;

• Ensure that the protective switch of memory card has been set in the above position for writing or deletion.

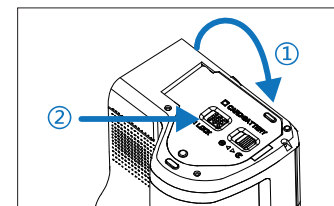
Memory card installation



1. Open the slot cover.
• As indicated direction by the arrows, slide and open the slot cover to insert memory card.



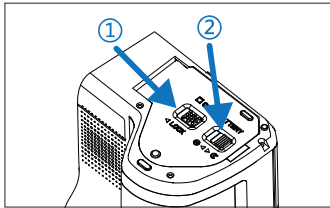
2. With label side of memory card facing you (as follows), insert it until there is a click sound.



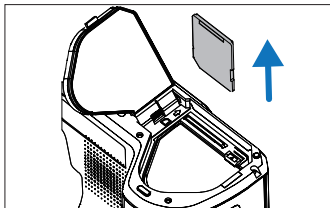
3. Close the slot cover.
As the indicated direction by the arrows, close and slide the slot cover to lock it.

Memory Card and Lens Installation

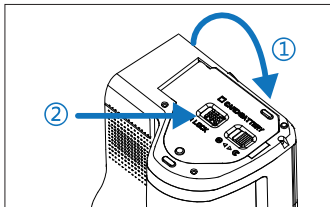
Memory card remove



1. Close device power supply and open the slot cover.
(Must confirm the indicator light is off before open)



2. Memory card remove: Push the memory card slightly, then release it to exit.

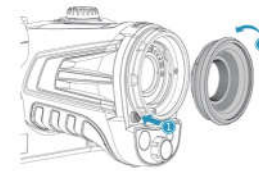


3. Take out it straightway and close slot cover.

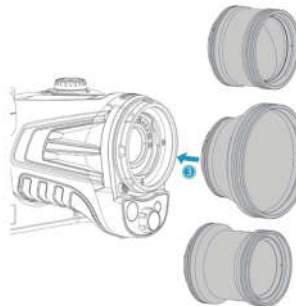
💡 The number of photos is determined by the left capacity of memory card, image recording quality, etc.

Memory Card and Lens Installation

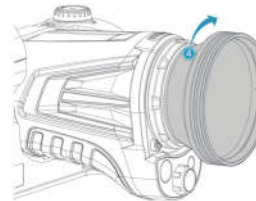
Matching lens installation



1. Press lens-changing button, remove the ring at indicated direction.



2. Turn the groove of optional lens upwards and insert into lens cone.



3. Rotate optional lens at indicated direction until a click sound happens.

(Remove optional lens is in the same way as that for remove the ring)

Outer Joins

Wireless AP setting

1. Enter into the object menu screen, click **AP^M** to enable AP function.
2. AP function enablement will be displayed automatically in the Status bar, and it is achievable to search signals by wireless card. SSID: GCamera is a factory default name. If want to modify it, refer to the section of Connection Setting–WIFI Hotspot Configuration.
3. Click **AP^M** again, then to disable this function. As follows:



AP function enablement



Chapter 9

Troubleshooting Guideline

Common problems

Troubleshooting Guideline

Common problems

Fault	Reason	Solution
Unable to boot	Low battery	Battery charging
	Battery: poor contact	Take out, put it again in battery cabin and install in place.
	External power supply: not plugged in place	Pull out plug, reinsert and push it in place.
Serious deviation between battery capacity indication and actual situation	Run out of battery	Replace a fully charged one.
	Beyond the battery service life	Replace a new one.
Fogged IR image	No focusing	Adjust focusing manually or automatically to get clear images.
	Unclean lens (steam, dust, etc)	Use special device to clean.
Fogging visible light image	Dark environment	Adopt illumination measures
	Unclean visible light front-end (stream, dust, etc)	Use special device to clean
False temperature measurement	No focusing on targets	Adjust focusing manually or automatically to get clear images and read the temperature value.
	Improper setting for parameters of temperature measurement	Modify parameter setting, or directly restore the default parameter value.
	Long time no heterogeneity correction	Heterogeneity correction: Set the custom button as "Compensation" in the menu, press custom physical button and there is a shutter sound.
	Immediate temperature measurement after boot	To guarantee the temperature measurement accuracy, it would be better to wait 5–10 minutes before temperature measurement.
	Long time no calibration	To acquire precise temperature value, it would be better to send back the thermal imager for calibration once a year.

产品简介

本产品是高性能手持测温型红外热像仪，它具有307200/120000个有效红外像素点，配置激光，照明灯和500W像素可见光，可外接PC机，SD卡，HDMI显示器等，满足不同应用场景下的拍摄需求。

重要说明

本手册为通用手册，涵盖一个产品线中的多款热像仪，这意味着某些功能和说明并不适用于您特定型号的热像仪。

注意事项

在任何时候都请严格遵守下列注意事项：

- 在使用设备时请尽量保持稳定，避免剧烈晃动。
 - 不要在超出设备许可的工作温度或储存温度环境中使用或存放仪器。
 - 不要将设备直接对准很高强度的热辐射源，例如太阳，激光器，点焊机。
 - 不要将设备暴露在灰尘或潮湿的环境中。在有水的环境中使用时，应避免水溅到仪器上。在不使用仪器时应盖上镜头盖。
 - 当不使用本设备时，请将仪器和所有配件放置在专用包装箱内。
 - 不要堵塞设备上的孔。
 - 不要敲打，扔掷或震动仪器和配件，以免造成损坏。
 - 请勿自行拆卸本机，这有可能造成设备损坏，并丧失保修权利。
 - 避免将随机的SD卡挪作他用。
 - 请不要在超过设备使用工作温度的环境下使用该设备，这可能会造成设备的损坏。
 - 不要将有溶解性或类似的液体用于设备，线缆，这可能会导致设备的损坏。
 - 长时间使用目镜会导致目镜对比度降低，画面变白，可切换为LCD屏显示，一段时间后再切为目镜显示。
- 本设备使用锂电子充电电池，为了安全使用电池，必须严格遵守下列事项：
- 在任何时候都不要尝试打开或拆解电池。
 - 不要将电池置于高温环境或靠近高温物体。
 - 不要使电池的正负极短路。
 - 不要将电池置于潮湿环境或水中。
 - 一旦电池发生泄露导致液体进入人眼，应该立刻用清水冲洗眼睛，且进行医学护理。
 - 请按照本手册中说明的方法为电池充电，并请遵照充电步骤和注意事项。错误的充电会导致电池变热，损坏甚至造成人体受伤。
- 擦拭本设备时请遵照以下措施：
- 非光学表面：在必要时可以使用干净柔软的布擦拭热像仪的非光学表面。
 - 光学表面：使用热像仪时请避免弄脏镜头的光学表面，特别要避免用手触碰镜头，因手上的汗迹会在镜头玻璃上留下痕迹且可能会腐蚀玻璃表面的光学镀膜层。当光学镜头表面受到污染时，使用专业镜头纸小心的擦拭。

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第1章

物品清单

标配件：

热像仪、锂电池、适配器、适配器插头（5个）、SD卡（16G）、肩带、USB连接线、HDMI连接线、网线、快速操作指南、说明书、光盘、携行包、配件清单卡

选配件：

蓝牙耳机、HDMI转模拟视频转换器、座充（此项目取决于产品型号）、长焦镜头、广角镜头、高温镜头

物品清单

标配件：



热像仪



锂电池



适配器



适配器插头(5个)



SD卡 (16G)



肩带



USB连接线



HDMI连接线



网线



快速操作指南



说明书



光盘



携行包



配件清单卡

物品清单

选配件：



蓝牙耳机



HDMI转模拟视频转换器



长焦镜头



广角镜头



高温镜头

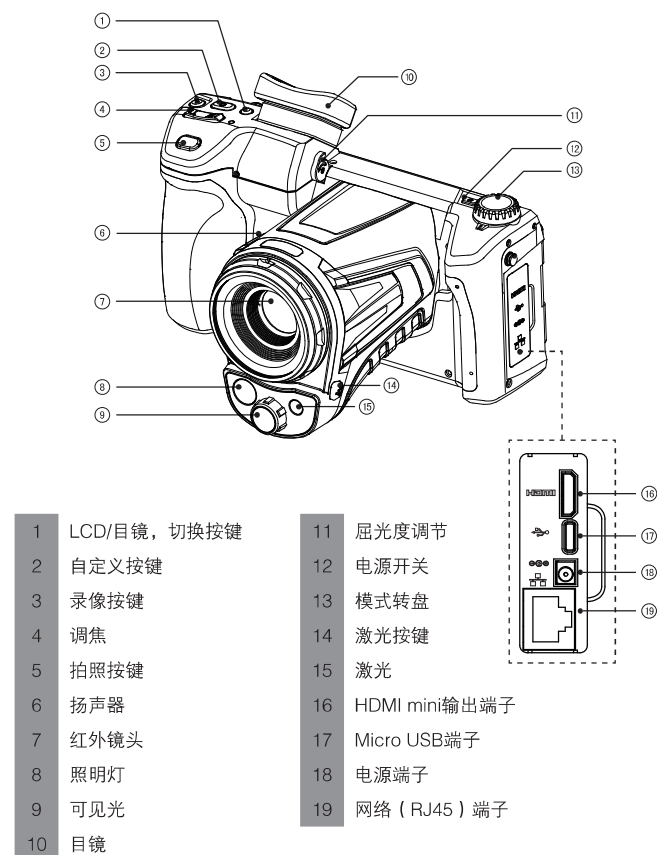


座充
(此项目取决于产品型号)

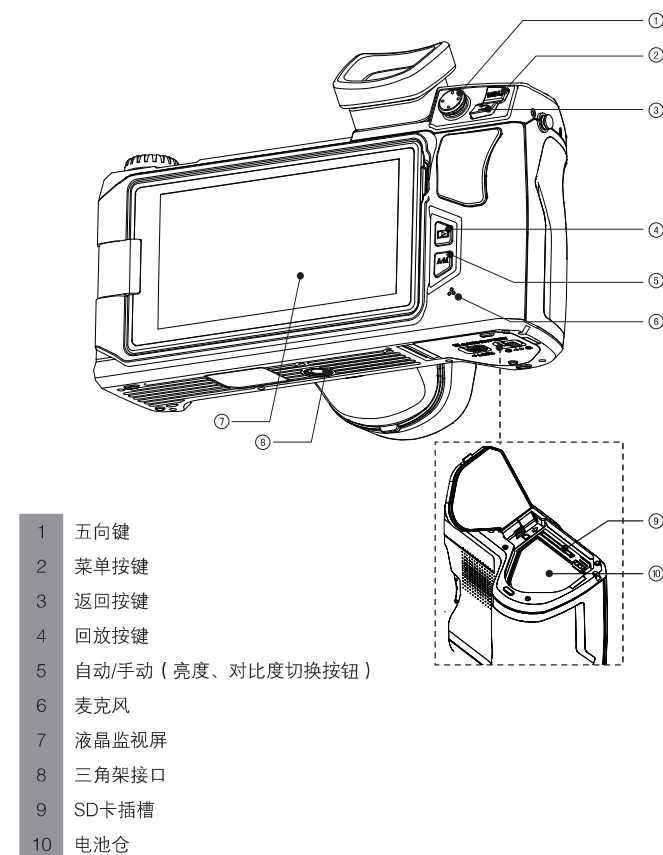
第2章

产品部件一览

产品部件一览



产品部件一览



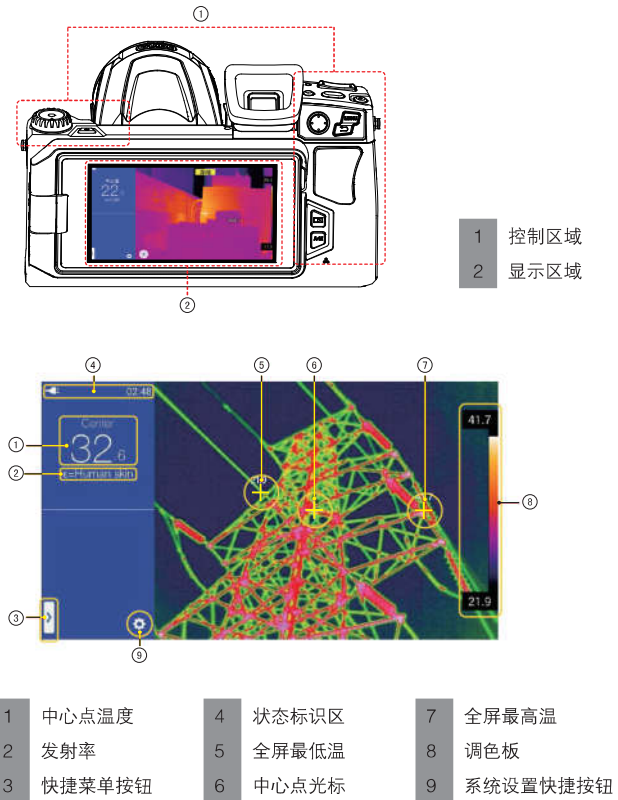
第3章

机身区域一览

各区域介绍
回放主界面
快捷菜单

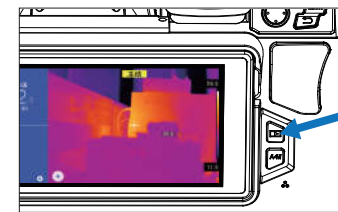
机身区域一览

A 各区域介绍:



机身区域一览

B 回放主界面:



1. 按下机身【回放】按钮。

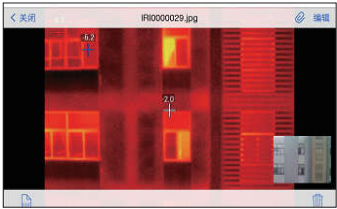


2. 直接进入图片浏览界面。



3. 触摸点击选择任意图片。

机身区域一览



4. 进入查看图像信息。



5. 点击右上角的【编辑】按钮或选择【参数】按钮，进入分析对象编辑区域。

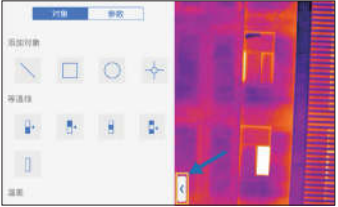


6. 对测温图像进行修改操作后，界面在退出前，会弹出是否保存修改的提示对话框，点击【确定】按钮保存修改。

机身区域一览

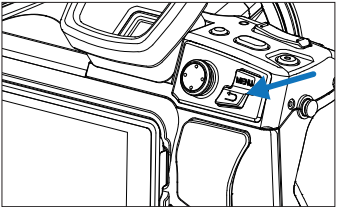
C 快捷菜单:

此界面主要是在实时画面中可进行的一些快捷操作，主要包括：图像分析，测温分析，参数修改、无线AP与LAN快速开启，自动拍照与自动录像等快捷操作。



进入快捷菜单

- 在实时画面运行状态下，按下设备端的物理按钮【MENU】，或点击触摸屏左下角的【>】按钮，系统会弹出快捷菜单界面。



退出快捷菜单

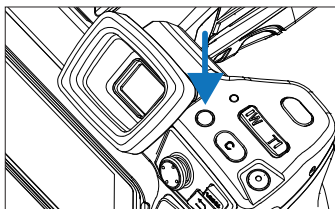
- 按下【返回】按钮或点击【<】按钮，退出快捷菜单并返回实时界面状态。

第4章

观测

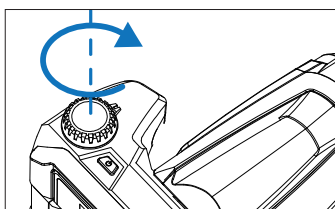
目镜切换
图像模式切换
测温
手动对焦/自动对焦
电子变倍

观测



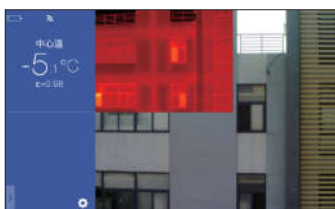
目镜切换

• 开机默认为LCD屏显示主界面，按下LCD/目镜切换按钮，LCD屏立即关闭，目镜随之开启。再次按下LCD/目镜切换按钮，即可恢复LCD屏显示，目镜则关闭。



图像模式切换

• 通过旋转机身左上方的模式转盘，图像可在如下四种模式下进行切换。



A. 画中画

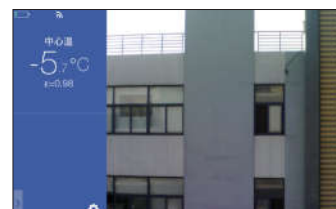
• 请转到PIP标识。

观测



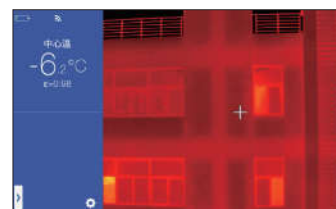
B. MIF

• 请转到MIF标识。



C. 可见光

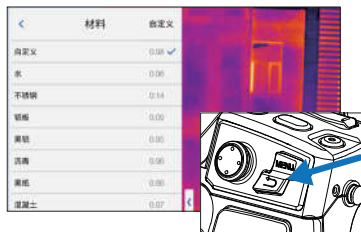
• 请转到VL标识。



D. 红外

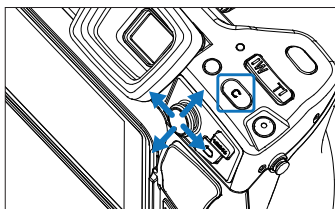
• 请转到IR标识。

观测



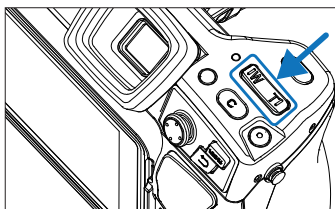
测温

- 在实时图像状态下，通过快捷菜单-参数-材料设置，选择被测物体的发射率。按下【返回】按钮或点击【<】按钮，返回实时界面，将中心点光标对准被测物体，进行测温操作。



手动对焦/自动对焦

- 通过方向键向上或向下，可以进行远焦/近焦调节。
- 设置自定义按键【C】功能为自动对焦（系统设置-自定义按键-自动对焦，详见 自定义按键 章节），对准被测物体，按下自定义按钮【C】，稍等几秒钟后，开始进行自动对焦直至对焦完毕。



电子变倍

- 按下机身实体按键W（拉近）与T（放远），进行数码变倍操作。



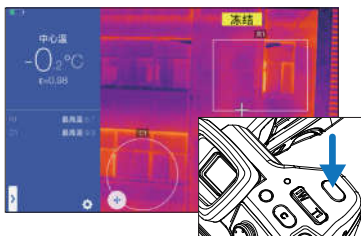
第5章 拍摄

拍摄图片
自动拍照
添加注释信息
录制视频

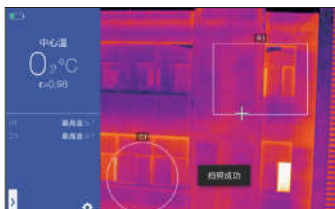
拍摄图片

在实时画面状态下，按下机器上的【拍照】按钮，可以对当前场景进行冻结画面、拍照保存等操作。

进入系统设置-拍照设置，直接设置拍照键功能为拍照，即可实现一键拍照。

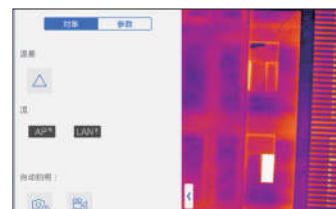


1.按下机身的【拍照】按钮一次，画面冻结，如图所示。



2.冻结界面状态下，再次按下【拍照】按钮，自动保存冻结的图像。

自动拍照



自动拍照设置

· 实时图像状态下，【MENU】菜单-自动拍照，移至定时拍照【定时】按钮一栏，点击后右侧区域立即弹出自动拍照参数设置界面。



自动拍照张数设置

1.点击自动拍照张数选项，选择拍照张数。
2.点击【开始】按钮，依据设定的定时拍照数量，开启定时拍照程序。

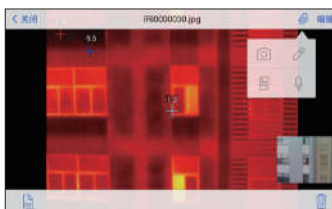


自动拍照间隔设置

1.点击自动拍照间隔选项，选择合适的间隔时间。
2.点击【开始】按钮，依据设定的定时间隔时间，开启定时拍照程序。

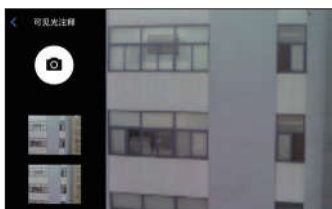
💡 该功能只对部分机型开放

添加注释信息



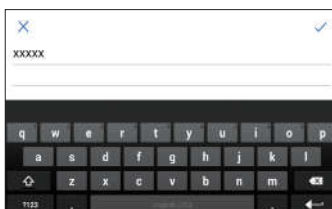
添加注释信息

- 1.按下设备上的【回放】按钮，进入文件浏览目录。
- 2.在触摸屏上单击选择需添加注释的原始图像，预览单个文件。
- 3.成功进入单张图像浏览界面后，选择右上方的附件图标【📎】，成功弹出添加相关注释操作的快捷菜单。



添加拍照注释

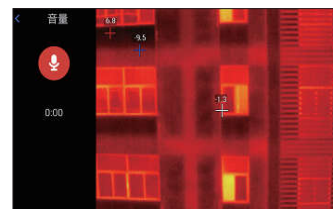
- 1.点击拍照注释【📷】按钮，进入拍照注释主界面。
- 2.点击拍照【📷】按钮，可以拍摄最多两张可见光图片，如图所示。



添加文本注释

- 1.选择添加文本注释【📄】按钮，
- 2.进入注释文本输入区域，输入有效的注释信息，如XXXX。
- 3.点击右上角的【✅】按钮，保存文本注释内容。

添加注释信息



添加语音注释

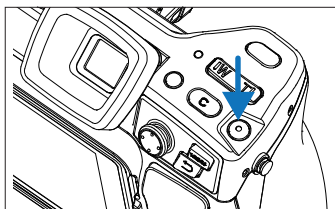
- 1.选择添加语音注释【🎤】按钮，进入语音注释界面。
- 2.点击录音【🎤】按钮，开始录音。
- 3.点击停止按钮，停止并保存录音文件。系统录制时长最多为60秒，如图所示。



添加涂鸦注释

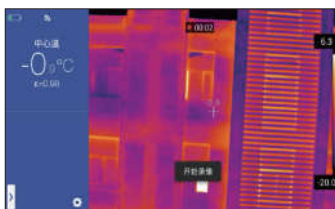
- 1.选择添加涂鸦注释【🖍️】按钮，进入涂鸦界面。
 - 2.左侧按钮功能依次为画笔、橡皮擦和各种颜色选取按钮，用户可以先选择任意一种功能，就可以直接在图像区域进行涂鸦操作。
 - 3.右侧画面中4个功能按钮从左至右分别为清理、保存、撤销上一步以及恢复，用户可以通过该按钮对图像区域进行操作。
 - 4.点击【✅】按钮，保存涂鸦数据。
- 点击【清理】按钮，清除当前涂鸦操作。
- 点击【🔄】按钮，还原上一步涂鸦操作。
- 点击【🔄】按钮，恢复操作。

录制视频



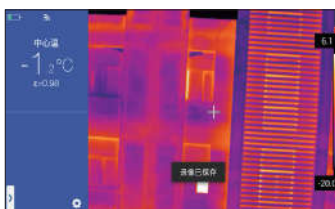
录像准备

- 在实时图像界面下，先对焦被摄物体。(拍摄短片之前，请先行自动对焦或手动对焦)
- 按下机身的【录制】快捷键。



开始录制

- 右上方开始显示录制时间计时信息。



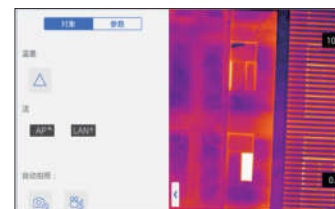
结束录制

- 再次按下录制按钮，结束录制，视频数据完成存储。
(如需查看录制短片，请通过回放快捷键跳转至回放界面即可。)

录制视频

定时录像设置 (该功能只对部分机型开放)

实时图像状态下，按下Menu菜单-自动拍照一栏，找到定时录像【】按钮



录像设置

- 点击定时录像【】按钮，程序会自动根据用户设置的录像间隔时间进行录像操作，文件格式为mp4。在图片浏览界面可以查看相关已保存的视频。同时，用户也可以使用机身的实体按键进行录像。如图所示



a. 录像延时时间

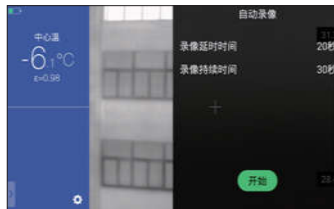
- 通过滚动栏选择自定义数值。



b. 录像持续时间

- 通过滚动栏选择合适的数值。

录制视频



开始定时录像

- 点击最下方的开始按钮。



停止录像与拍照

- 点击屏幕右上的【退出】停止录制。

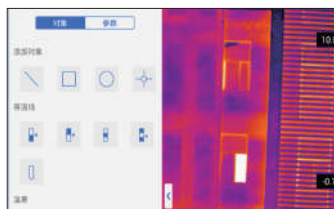


第6章 分析操作

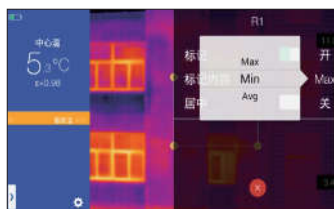
实时分析
文件浏览
图片分析
等温线
自定义发射率

实时分析

添加/删除分析对象

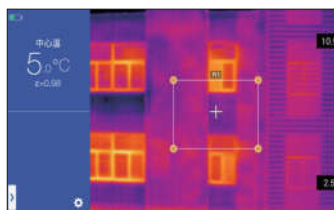


1. 在实时画面中，点击左下角图标，进入添加分析对象菜单界面，如图所示
• 提供多种分析对象测温，如线、矩形、圆形、点，同时也能够自定义显示最高温、最低温、平均温度值以及居中显示功能。如图所示



2. 通过触摸屏长按任意分析对象，系统自动弹出对象菜单，功能如下；
标记：控制显示温度标记（最高温、最低温、平均温）。
标记温度：显示分析对象区域中的最高温、最低温或平均温标记。
居中：控制是否居中显示分析对象。
删除按钮：触按编辑界面的【删除】按钮，即可删除当前分析对象。

改变分析对象大小



1. 选中任意分析对象，其各节点均为选中状态且颜色为黄色标记；
2. 移动任意一个节点，即可改变分析对象的区域范围。

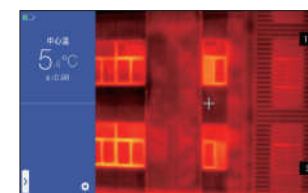
实时分析

调色板切换

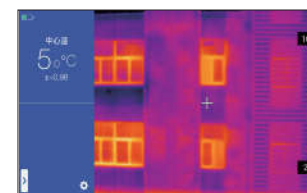
1. 进入主界面，点击屏幕右侧的调色板区域，系统弹出调色板选项，分别为白热、熔岩、亮度、彩虹、北极、热铁、分层、医疗、描红、黑热。（部分机型调色板数量会有所减少）
2. 用户可以自由切换各种色带模式。如图所示



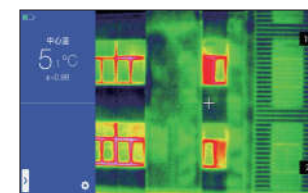
白热



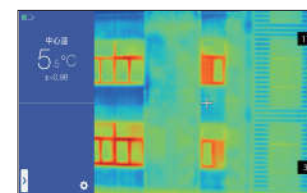
熔岩



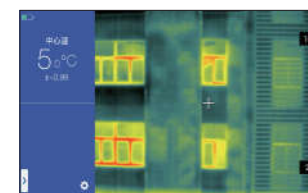
亮度



彩虹

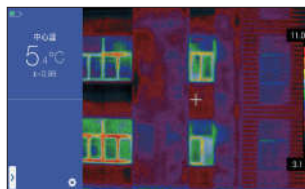


北极

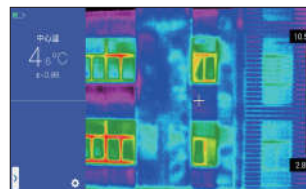


热铁

实时分析



分层



医疗



描红



黑热

实时分析

手动亮度/对比度调节

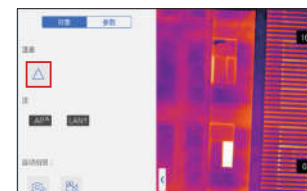
1. 在实时画面状态下，通过Menu按钮，打开菜单选项；
2. 轻按设备右下方的【】锁定按键，实时视频画面中的色带最高温与最低温值变成锁定状态；
3. 点击最高温或者最低温，系统会自动弹出相应的数值菜单。如**锁定温度图**所示；
4. 选择合适的高温或者低温值后，点击任意画面区域，即可保存温度值和重新显示最新结果。



锁定温度

温差分析

1. 首先，添加至少2个分析对象，点击对象标签下的温差按钮，激活温差模式；
2. 温差分析：选择至少2个分析对象，进行温差分析，左侧数据栏会自动显示相关数据；
3. 退出温差分析：进入快捷菜单-温差功能，再次点击已激活的温差图标 即可退出温差状态。



温差分析前



温差分析后

文件浏览



本机图片: 按下回放按键，进入文件浏览主界面，选择照片-本机图片，系统会自动显示机身存储中的全部图片文件。

本机视频: 按下回放按键，进入文件浏览主界面，选择照片-本机视频，系统会自动显示机身存储中的全部视频文件。

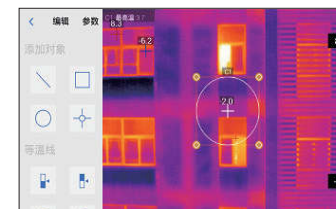
SD卡图片: 按下回放按键，进入文件浏览主界面，选择照片-SD卡图片，系统会自动显示外置SD卡中的全部图片文件。

SD卡视频: 按下回放按键，进入文件浏览主界面，选择照片-SD卡视频，系统会自动显示用户SD卡中的全部视频文件。

图片分析

图片编辑

1. 在图片预览界面，单击任意一张图片即可进入编辑图片界面，
2. 点击【】按钮，系统自动弹出注释菜单，可以对当前图片进行语音、文本注释等操作。
3. 点击【编辑】按钮，即可对当前图片进行分析对象添加修改、等温线修改以及两点温差修改。



分析对象编辑

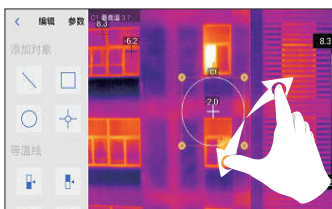
4. 点击【参数】按钮，还可以对其他属性进行修改，退出后保存设置。如图所示。



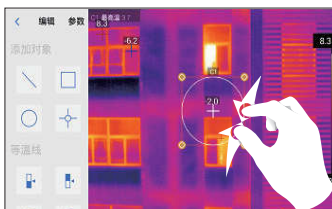
图片属性

图片分析

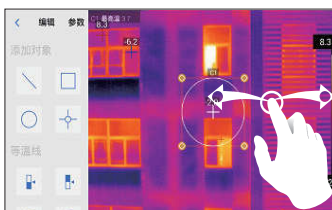
放大和缩小图像



- 在图片编辑的模式下，用两个手指触摸屏幕，然后在屏幕上将手指张开。
- 张开手指时，图像将被放大，最大为10倍。



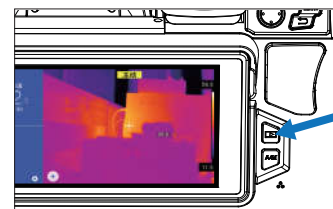
- 合拢手指，图像将被缩小。



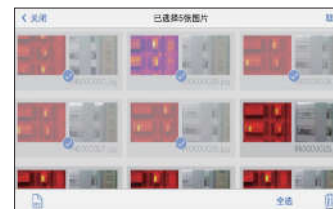
- 在红外图像放大的状态下，单个手指在屏幕任意区域滑动，即可对红外图像进行移动显示。

图片分析

创建PDF



1. 按下回放按钮，进入图片浏览界面；



2. 通过点击选择【选择】按钮，可以自由选择最多5个图像信息。如图所示；



3. 点击左下角的【PDF】按钮，即可生成PDF预览文件。

图片分析

PDF打印

1. 通过系统设置-连接设置界面，连接无线打印网络（无线打印）；
2. 进入回放界面，选择一张图像，并进行PDF打印输出操作，详见 生成PDF 章节；
3. 触按PDF预览界面右上方的【打印】按钮；
4. 准备开始打印 触按打印按钮，即可实现无线打印。



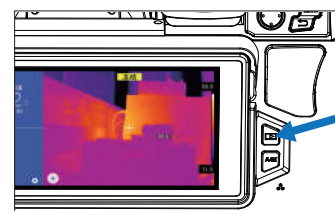
PDF打印



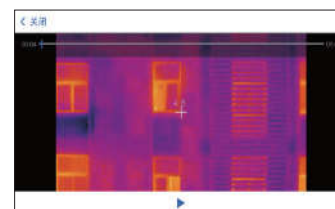
无线打印预览

图片分析

视频回放



1. 进入图片回放界面，点击照片-本机视频，成功进入本机视频界面，选择一个mp4文件结尾的视频短片



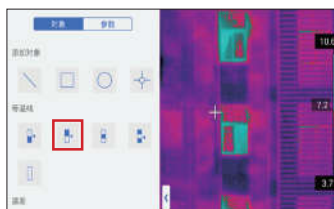
2. 回放短片
 - 点击屏幕中央的播放按钮，将开始短片播放。
 - 要显示短片回放面板，点击屏幕即可。
 - 要在播放期间暂停短片，点击屏幕下方暂停按钮。

等温线



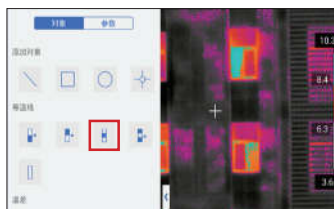
向下等温线

1. 使用实体Menu调出主菜单，单指向下滑动对象界面至等温线一栏；
2. 在等温线一栏，触控  图标，目标场景进入向下等温线图像模式。如图所示；



向上等温线

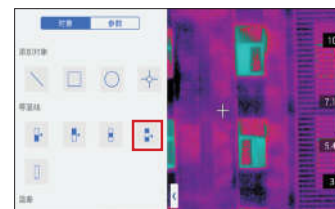
1. 使用实体Menu调出主菜单；
2. 单击  图标，即进入向上等温线实时视频图像模式。如图所示；



区间内等温线

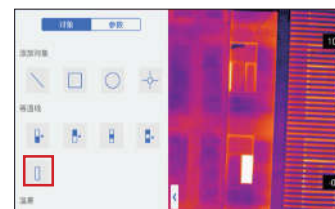
1. 使用实体Menu调出主菜单；
2. 单击  图标，即进入区间内等温线图像模式。如图所示；

等温线



区间外等温线

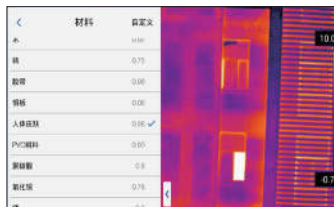
1. 使用实体Menu调出主菜单；
2. 单击  图标，即进入区间外等温线图像模式。如图所示；



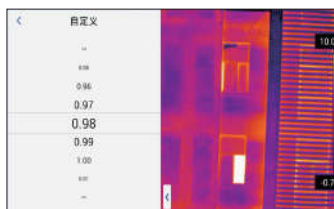
取消等温线

1. 进入分析对象菜单选项，单击  图标，即关闭等温线显示。如图所示

自定义发射率



1. 点击进入菜单-参数界面，选择【材料】选项，目前提供多种预设值，如图所示；



2. 选择自己的需求对参数进行自定义修改，范围控制在0.01~1.00，滑动相应数值进行修改，点击左上角的【<】按钮即可退出并保存。如图所示；



自定义参数介绍：

反射温度：用户可以依据实际情况对参数进行修改，范围值在0~100之间。

目标距离：用户可以依据实际情况对参数进行修改，范围值在0~100之间。

相对湿度设置：用户可以依据实际情况对参数进行修改，范围值在0~100%之间。



第7章 全局设置

系统设置
本地设置
连接设置
关于更新

系统设定

在实时视频界面，点击【】设置按钮，即可进入全局设置界面，设置界面主要对系统各个主要参数进行修改，包括温度单位、距离单位、亮度、网络连接、日期与语言、邮件配置等。



测温范围

• 主要是对当前机器可测量的目标温度范围进行设置。
(该功能仅对部分机型开放)



温度单位切换

• 可以自由切换系统显示的摄氏度 (°C) 和华氏度 (°F) 单位。
默认温度单位摄氏度 (°C)。



距离单位切换

• 切换米、英尺选项，默认单位米。

系统设定

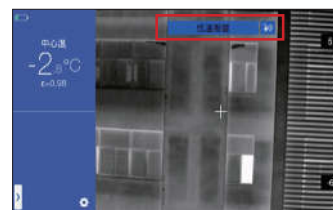
报警设置

控制报警的温度与范围，默认关闭状态。
报警温度值范围需要进入测温范围进行获取。
报警范围分别是高温或者低温。
测温范围设置是-20~150摄氏度，报警温度就在此区间内。



高温报警

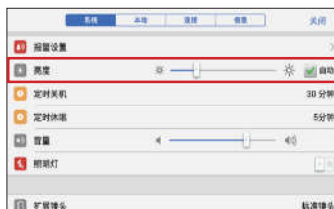
1. 打开温度报警开关，设置报警温度范围值为 高温，且报警温度设定值为-20摄氏度。
2. 回到实时测温界面，机器会立即发声报警。
3. 点击【】图标会立即关闭高温报警声音。



低温报警

1. 打开温度报警开关，设置报警温度范围值为 低温，且报警温度设定值为30摄氏度。
2. 回到实时测温界面，机器会立即发声报警。
3. 点击【】图标，关闭低温报警声音。

系统设定



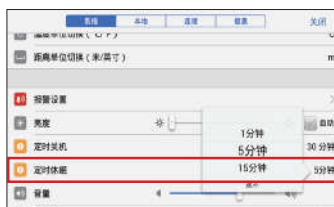
亮度

- 可以自动或者手动调整触摸屏亮度。



定时关机

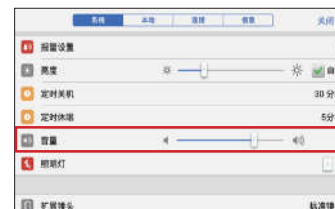
- 设置定时关机选项，默认值为永不。提供5分钟、10分钟、30分钟、60分钟以及永不关机选择。



定时休眠

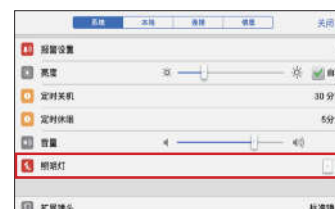
- 设置定时休眠选项。默认值为永不休眠。提供1分钟、5分钟、15分钟、永不的选项选择。

系统设定



音量

- 调节控制设备音量，或者静音。



照明灯

- 设置定时关机选项，默认值为永不。提供5分钟、10分钟、30分钟、60分钟以及永不关机选择。



扩展镜头

- 扩展镜头手动设置，默认为标准镜头。

系统设定



自定义按键

- 设置机身自定义按键快捷操作，包括照明灯、调出调色板、自动对焦、补偿等。



全图温度标记

- 控制实时画面中高低温跟踪模式，默认值为不显示（高低温跟踪关闭）。



等温线颜色

- 设置定时休眠选项。默认值为永不休眠。提供1分钟、5分钟、15分钟、永不的选项选择。

系统设定



拍照设置

- 设定拍照按钮触发的动作，包括冻结/拍照、拍照、冻结操作。

本地设置

报表设置

· 可以对PDF报表各参数进行修改，包括报表logo、报表页眉、报表页脚、PDF模板选择（提供3种预置模板）。



报表设置

时间/日期

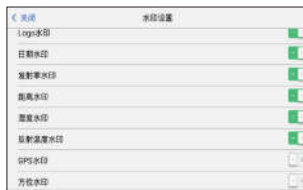
· 手动设定系统日期与时间。

语言

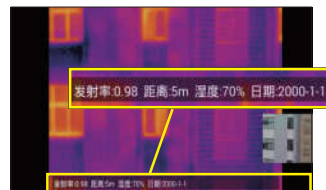
· 提供多国语言切换。

水印设置

1. 进入水印设置，开启部分水印选项，包括Logo水印、日期水印、发射率水印、湿度水印、反射率水印、GPS水印、方位水印等。
2. 回到实时画面中，任意拍一张示例图片。
3. 按下快捷回放按钮，进入图片浏览界面，选取刚刚拍下的一张图片进行预览。
4. 预览图的最下方会显示所有已开启的水印信息。



水印设置



水印效果预览

连接设置

WiFi开关

如果WiFi图标出现在主屏幕顶部，表示您已经连接到无线局域网。

(控制WiFi模块的开启和关闭功能)



1. 选取网络：轻点列出的一个网络，然后输入密码（如果需要）加入封闭式无线局域网；轻点“其他”，然后输入封闭式网络的名称。您需要知道网络名称、安全性类型和密码。



2. 密码输入成功，进入连接界面。



3. 点击更多信息按钮，即可进入WiFi地址设置界面，用户可以选择STATIC标签自行修改IP地址，忽略网络：轻点以前加入的网络旁边的更多信息按钮，然后轻点“忽略此网络”。

连接设置

设备IP设置

用户可以自定义设置IP地址，DNS服务器地址。



1. IP地址：输入有效的IP地址，如172.16.14.216，DNS服务器地址202.103.24.68（请依据用户自身所处局域网状况自行设置IP地址与DNS地址）



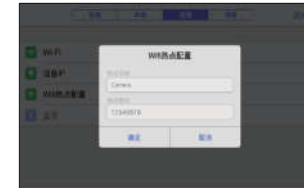
2. 设置主机IP：设置台式电脑的本地连接IP地址为172.16.14.230，DNS为202.103.24.68即可与配套软件协同使用*。

***需要与PC端应用软件配合使用**

连接设置

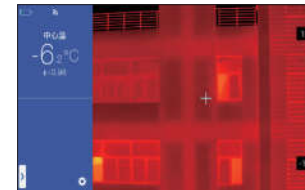
WiFi热点配置与APP连接

1. 进全局菜单--连接设置--WiFi热点配置标签，
2. 在配置界面中，输入有效的热点名称Camera，密码12345678，点击确定按钮保存成功。



Wifi热点配置

3. 然后再返回到实时画面主界面，触按左下角的快捷菜单按钮【>】，选中并打开AP开关。
4. AP成功开启后，会在主界面的任务栏中显示激活状态。
5. 无线AP功能激活后，用户可以使用手机端APP输入正确的用户名和密码，即可成功连接WiFi网络。（**SSID=Camera 密码=12345678**）。
6. 与应用APP连接 打开并连接Android/Iphone手机中的WiFi热点，输入以上用户名和密码，成功连接。
7. 打开APP，APP连接成功并显示实时图像。



AP连接成功



APP连接成功

注意：每次点击全局菜单快捷键后，AP会自动关闭，需要用户自行在实时画面中的住菜单界面下再次打开。

连接设置

蓝牙耳机配对

1. 开启蓝牙耳机，按住通话按钮 3 秒，进入配对模式。
(蓝色指示灯持续亮起，并停留 3 分钟。)
2. 进入系统设置-连接设置-蓝牙，开启蓝牙设置开关，系统自动搜索蓝牙设备，在设备列表中选择蓝牙耳机 (HM1900) 进行配对。
3. 配对完成后，耳机将在每次开启时尝试重新连接。



开启蓝牙



蓝牙耳机配对成功

关于更新



SD卡升级

- 将最新版本的升级包apk文件，放置到外置SD卡中的GCamera / update目录下，再点击此升级按钮，会提示正常升级操作，否则升级失败，升级成功后需重启机器。



存储空间

- 主要显示内部存储设备的剩余容量以及外置SD卡的基本信息。同时用户可以自定义设置存储选项，包括机身内部存储和外置SD卡存储。
- 选择存储介质：进入设备存储界面，用户可以选择内存存储设备或者SD卡进行数据存储。



格式化SD卡

- 若要开始格式化，请选择一个存储卡插槽，然后选择是。请注意，格式化会永久删除所选插槽中存储卡上的所有照片及其它数据。在格式化之前，务必根据需要进行备份。

关于更新



还原默认设置

1. 进入设置菜单-信息-还原所有设置，并点击还原设置标签
2. 此功能会将机器恢复为出厂状态。请谨慎操作。



第8章

与外部设备连接

端口连接示意图
安装存储卡与镜头
外部连接

与外部设备连接

端口连接示意图

本产品可以使用HDMI数据线、USB数据线、网线与外部设备进行连接。

Mini HDMI接口

Mini HDMI接口主要连接外部高清显示器使用，请确保所需连接的显示器均带有HDMI接口。

1. 将HDMI连接线连接到热像仪。
2. 让Mini HDMI插头的<HDMI>标志朝向设备前面，将其插入。
3. 将HDMI连接线连接到高清显示器的HDMI IN端口。
4. 打开高清显示器并切换其视频输入 以选择连接的端口。

USB接口

1. 查看内部存储文件。

将USB数据线与台式电脑进行连接后，打开我的电脑，查看内部存储盘信息，点击进入内存设备，找到存放图片的文件夹，具体路径为…\SABRES- MX6DQ\内存设备\DCIM\CA Camera\Sourceimage。



注意：IRI开头的文件名称为红外图像，VIS开头的文件名称为可见光图像。

2. 查看SD卡文件。

如需将拍摄图片存入SD卡，请先进入全局设置-信息-存储空间，选择存储介质为SD卡，再进行拍照操作即可将文件保存到内存卡中。

与外部设备连接

使用USB数据线连接到电脑，打开我的电脑，查看内部存储盘信息，点击进入内存设备，路径为…\SABRES- MX6DQ\SD 卡\DCIM\GCamera\SourceImage



注意：IRI开头的文件名称为红外图像，VIS开头的文件名称为可见光图像。

LAN接口

1. 网口连接：将台式电脑网线接口与CA1889系列设备网口进行连接，且状态正常。
2. 设置IP：进入全局菜单-连接设置-设备IP，用户可以手动设置相关参数。输入正确的IP地址和DNS地址，详见 设备IP地址 章节。
3. 打开LAN口：进入实时画面主界面，打开菜单选项，点击[LAN]按钮即可开启LAN连接。



(此功能需与PC端应用软件配合使用)

与外部设备连接

4. 与应用软件连接：打开Windows版本红外分析软件，进入视频分析界面，选择机型，输入正确的IP地址



5. 显示实时画面：与设备成功连接，并正确显示实时画面。



注意：通过网线（wifi）成功打开PC端红外分析软件红外视频（移动端APP红外视频）后，通过设备触摸屏点击系统设置快捷按钮进入系统设置后，红外视频会断开，如需继续使用，需要重新连接。

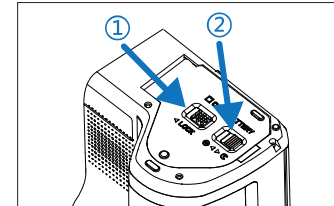
安装存储卡与镜头

本产品可以使用SD卡，所拍摄的图像和视频可记录在本机或SD卡上。本产品最大支持32GB容量的SD卡，标配为16GB，测试成功的SD卡包括：

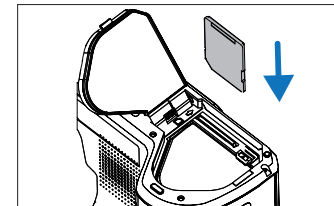
- （1）三星(16GB CLASS10)，（2）SanDisk(16GB CLASS10)，
- （3）Kingston(16GB,CLASS10)

· 确存储卡的写保护开关设置在上方位置，以便允许写入/删除。

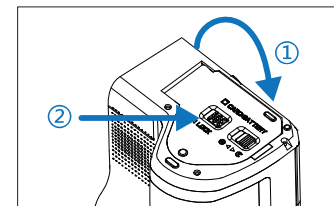
安装存储卡



1. 打开插槽盖，如箭头所示方向滑动并打开插槽盖，插入存储卡。



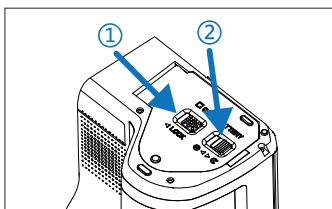
2. 如图所示，令存储卡的标签侧朝向您并将其插入直到发出咔嚓声到位。



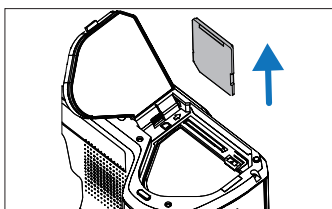
3. 关闭插槽盖。
· 关闭插槽盖并如箭头所示方向滑动插槽盖直至其锁闭。

安装存储卡与镜头

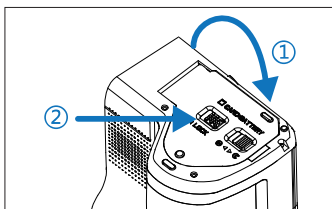
安装存储卡



1. 先关闭设备电源，然后再打开插槽盖。
(确认指示灯熄灭，然后打开 插槽盖)



2. 取出存储卡。要退出存储卡时，轻轻推入存储卡，然后释放。

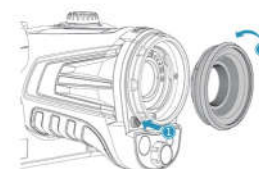


3. 径直拉出存储卡，然后关闭插槽盖。

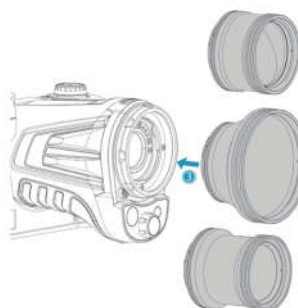
注意：可拍摄数量取决于卡的剩余容量、图像记录画质等。

安装存储卡与镜头

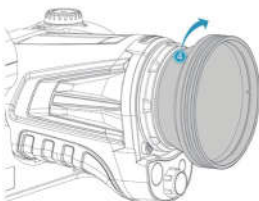
安装选配镜头



1. 按下更换镜头按钮，按图示方式取下镜头装饰盖。



2. 将扩展镜头凹槽向上，插入镜头。



3. 按图示方式旋转，直至听到“咔”声，镜头安装成功。

(取出扩展镜头方法与取出镜头装饰盖方法一致)

外部连接

无线AP设置

1. 进入对象菜单界面，直接点击【**AP**】AP按钮，打开无线AP功能，
2. 状态栏会自动显示AP功能已开启并可以通过无线网卡进行信号搜索（SSID: GCamera），此SSID为出厂默认名称，如需修改请参见 连接设置-WIFI热点配置章节，
3. 如需关闭该功能，需要再次点击AP按钮即可。如图所示



开启AP

第9章 故障排除指南

常见问题汇总

故障排除指南

常见问题汇总

症 状	原 因	措 施
无法开机	电池电量不足	重新充电后再使用电池
	电池接触不良	取出电池，重新放入电池仓内并安装到位
	外接电源的插头没插到位	拔出电源插头，重新插入并推到位
电池电量指示与实际使用情况偏差较大	电池电量耗尽	更换充满电的电池
	电池寿命已到	更换新电池
红外图像不清晰	没有进行对焦	手动对焦或自动对焦使图像清晰
	镜头蒙上水汽或被污染	使用专业设备清洁镜头
可见光图像不清晰	环境太暗	采取适当照明措施
	可见光前端有水汽或被污染	使用专业设备清洁可见光前端
测温不准	没有对目标聚焦	手动对焦或自动对焦使图像清晰，然后再读取温度
	与测温相关的参数设置不对	更改参数设置，或直接恢复默认参数值
	长时间没有进行非均匀性校正	在菜单中将自定义按键设置为补偿，按下自定义实体按键，听到快门响声，进行一次非均匀性校正
	开机立刻测温	为保证测温精度，我们建议您打开热像仪之后，等待5~10分钟再开始测温
	长时间没有校准	为获取精确的测温结果，我们建议您每年将热像仪送回校准一次