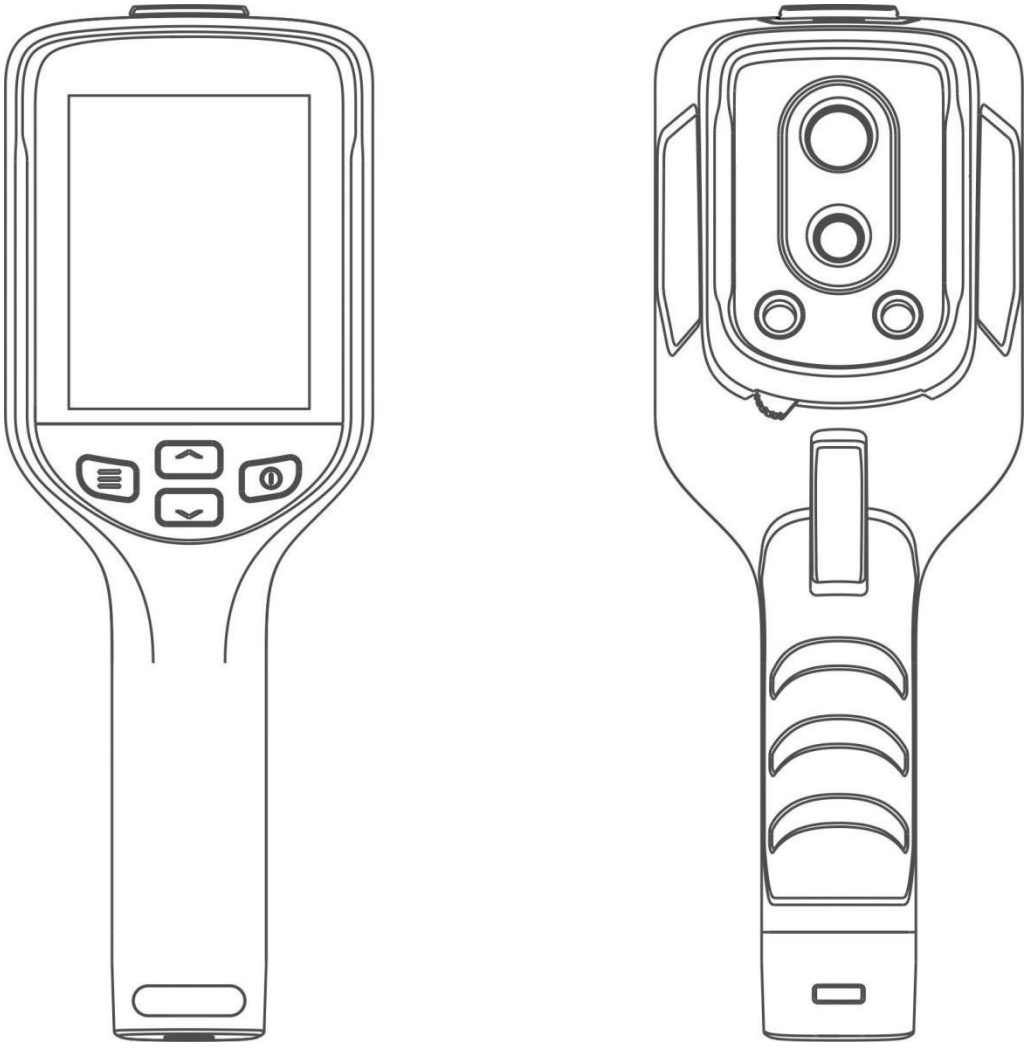
User’s manual

Tool-like Thermal camera



Thank you for purchasing this product. Please read this manual before use. The images are for reference only, and the actual product shall prevail.

1. User Notice

1.1. Important Notes

This manual serves as a general guide for the product series. Please note that the specific model you received may differ from the images in this manual, and the actual product shall prevail.
This manual is compiled to facilitate user operation and understanding of our products. While we strive to ensure the accuracy of its content, we cannot guarantee absolute completeness as our products undergo continuous updates and improvements. The company reserves the right to modify this manual without prior notice.

1.2. Storage and Transportation

Storage: The packaged products should be stored in a clean, well-ventilated indoor environment with a temperature range of -40°C to 60°C, relative humidity not exceeding 95%, free from condensation and corrosive gases.
Transportation: During transit, the products must be protected from rain, water immersion, and inversion. Avoid severe vibration and impact. Handle with care during movement - dropping or rough handling is strictly prohibited.

1.3. Precautions

1.3.1. Hazards

1)Always follow the charging methods outlined in the Quick Start Guide, adhering strictly to the specified steps and precautions. Incorrect charging may cause battery overheating, damage, or even personal injury. Ensure no flammable materials are present within a 2-meter radius of the charger during charging
2)Never attempt to disassemble or open the battery. If battery leakage occurs and liquid contacts the eyes, immediately rinse with clean water and seek medical attention

1.3.2. Warning

1)Keep the device stable during use and avoid sudden or violent movements.
2)Do not use or store the device in environments that exceed its permitted operating or storage temperature ranges.
3)Avoid exposing the device directly to intense heat sources such as sunlight, lasers, or spot welders, as this may cause damage.

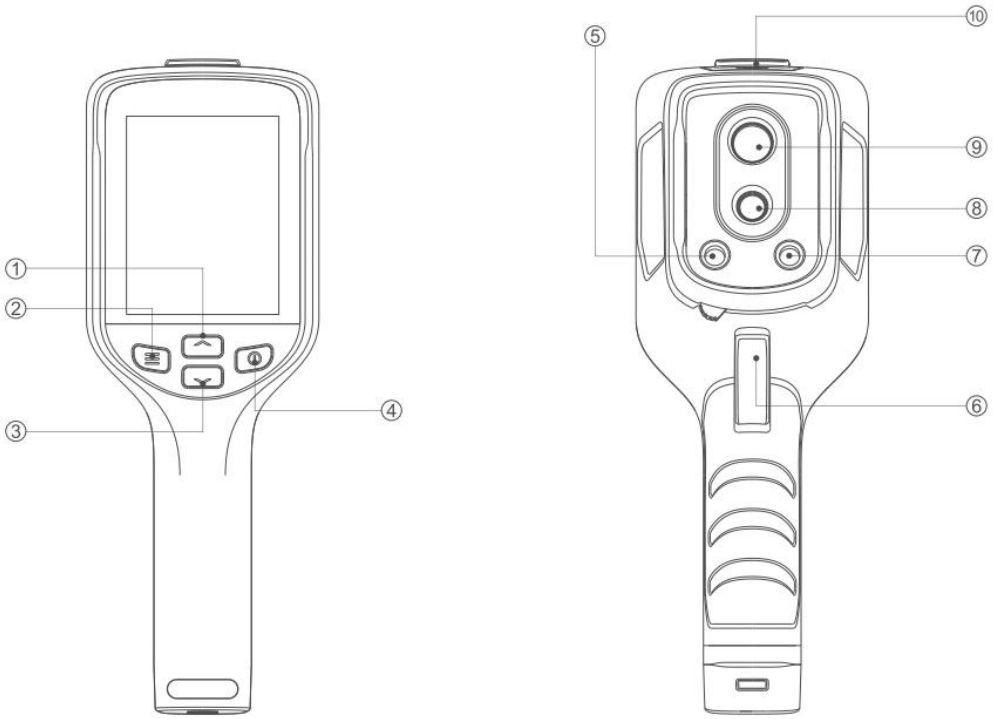
4)Do not block any openings or vents on the device.
5)Avoid striking, dropping, or subjecting the device and its accessories to strong vibrations to prevent damage.
6)Do not disassemble the device yourself, as this may void the warranty and cause damage.
7)Do not clean the device or cables with solvents, as they may cause damage.
8)When cleaning the device, follow these guidelines:
Non-optical surfaces: Use a clean, soft cloth if necessary.
Optical surfaces: Avoid contaminating the lens during use. If the lens surface becomes dirty, carefully clean it with professional lens tissue.
9)Do not place the device in high-temperature environments or near heat sources.
10)Avoid exposing the device to moisture or submerging it in water.

1.3.3. Caution

1)Do not expose the device to dusty, damp, or corrosive environments.
2)When not in use, store the device and all accessories in the dedicated packaging case.
3)If the device remains unused for an extended period, recharge it every 3 to 6 months to maintain battery activity.
4)The batteries involved in this device are intended to be removed or replaced only by authorised professional personnel. End-users must not remove the battery themselves, as this may impair the waterproof/dustproof performance and cause safety hazards.

2. Thermal Imager Overview

2.1. Overview diagram



No.	Component	Component
1	Up Arrow Key	**Menu Mode:** Press to select function parameters. **Non-Menu Mode:** Press to toggle Super-Resolution mode on/off.
2	Menu/OK Key	**Menu Mode:** Press to confirm selection of this function. **Non-Menu Mode:** **Short press** → Enter menu parameters. **Long press** → Select **LevelSpan mode (A/M/S)**.
3	Down Arrow Key	**Menu Mode:** Press to select function parameters.

		Non-Menu Mode: Press  to switch image modes.
4	Power/Back Key	**Short press**  to return/go back **Long press**  to power off **Non-Menu Mode:** **Short press**  to turn the light on/off.
5	Laser Button	Laser pointer
6	Trigger Button	**Menu Mode:** Lightly press the trigger to return to the live preview screen. **Non-Menu Mode:** Short press the trigger to capture a snapshot. Long press the trigger to start/stop video recording.
7	LED	lighting lamp
8	Visible Light	Visible light camera
9	Infrared	Infrared camera
10	USB-C	To charge the device or transfer files, connect the USB Type-A end to your computer/power adapter, and the Type-C end to your device.

2.2. **Device Charging**

2.2.1. Instructions

This device is equipped with a built-in battery. Before initial startup, charge the device continuously for **at least 2 hours** using the included charger.

Note:

- If the camera has been idle for an extended period, resulting in **battery over-discharge**, charge it for **at least 30 minutes** before powering on.
- It is recommended to use the **original USB cable** (included in the package) for both **charging and data transfer**.

2.2.2. Charging Indicator Status

Light	Status
Red	Battery is charging
Green	Battery level ≥ 90% (fully charged)

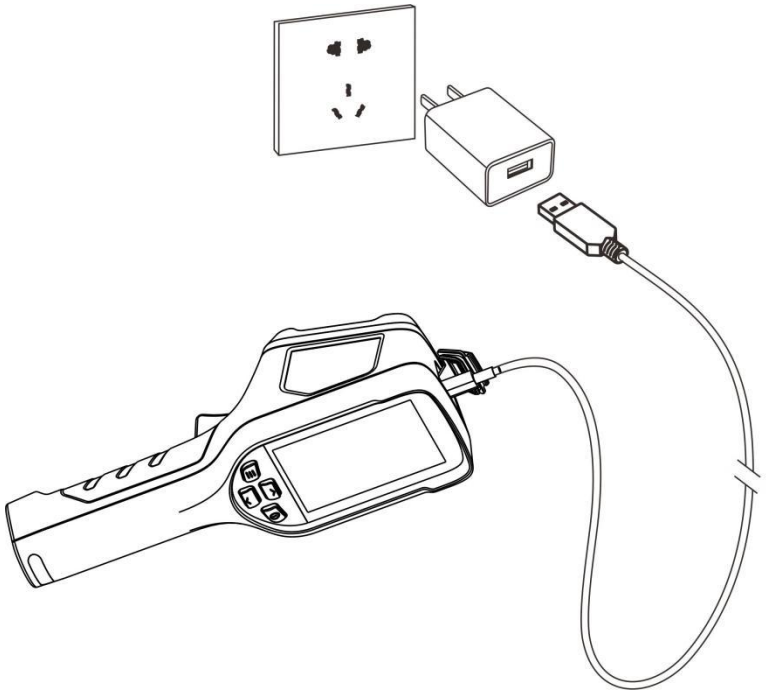
2.2.3. Charging

. **Open the top cover** of the device.

. **Insert the Type-C plug** of the charging cable into the device, and **connect the Type-A plug** to the power adapter.

- **Warning:** Do not use third-party USB-C to USB-C data cables.

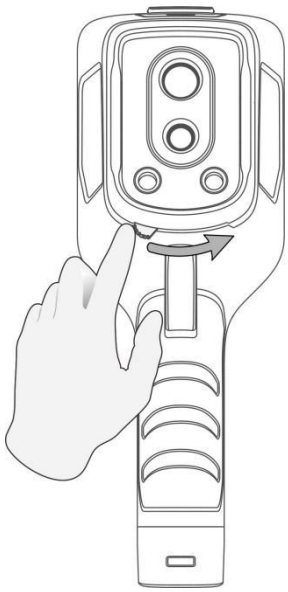
. **Use the original charging cable** provided with the device to achieve **maximum charging speed**.



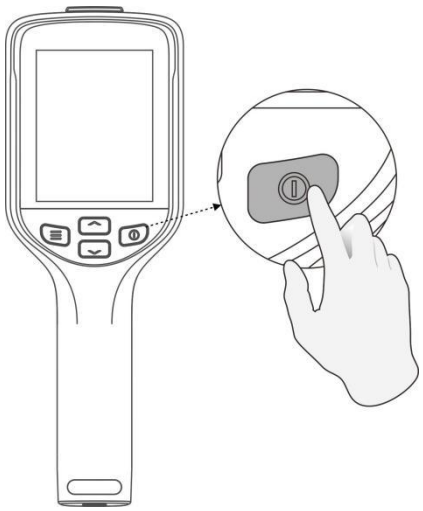
2.3. Operating the Device

2.3.1. Power On/Off

- **Slide the switch** left or right to open the lens cover.



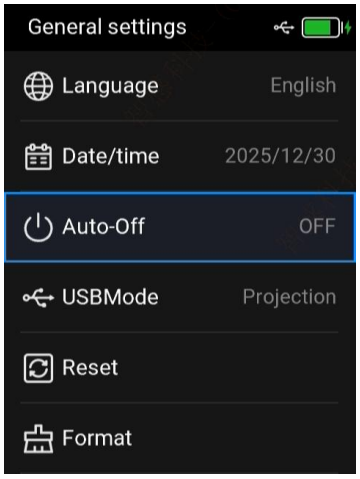
- **To power on**: Press the **Power button**. Wait for the device interface to stabilize before observing the target.
- **To power off**: Hold the **Power button** for **2 seconds or longer**.
- **Note**: Do **not** remove the battery to turn off the device.



2.3.2. Auto Power-Off

To configure auto shutdown:

1) Enter real-time preview mode.
2) Press the button to access [Menu] → [General Settings] → [Auto Off]
3) Set the desired shutdown timer based on your needs



2.3.3. Operation Method

The device only supports physical button control. Use the navigation button to configure parameters and settings36.

• Press  to access the menu for parameter configuration7.

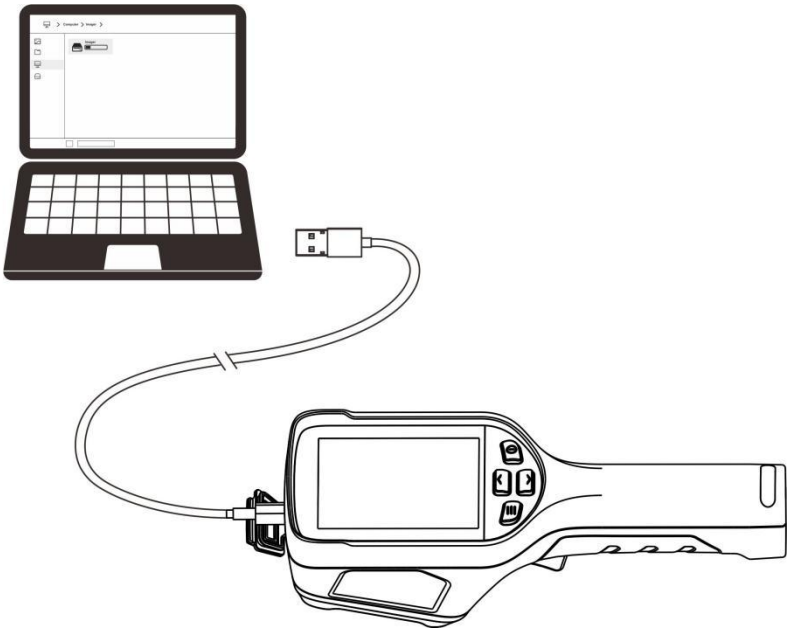
• Press  for quick operations or vertical navigation (up/down selection)7.

• Press  to return to the previous level7.

• Press the trigger button to exit to the main preview interface

2.3.4. Connecting External Devices

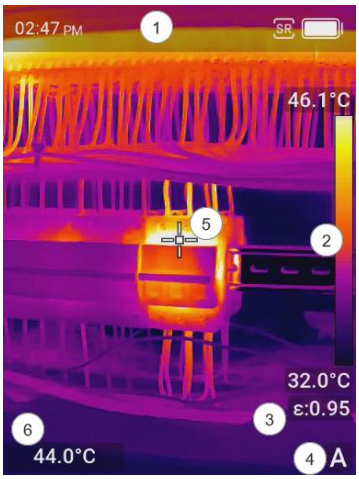
• Use a USB-C to USB-A or USB-C to USB-C cable to transfer image/video files from the device to a computer.
• Use USB-C for screen mirroring via third-party video software (e.g., PotPlayer).
• Connect to a USB adapter for battery charging.



2.4. Screen Elements

2.4.1. Main Preview

Upon startup, the device will display a real-time thermal imaging preview on the screen.
Please note:
As this manual is periodically updated, there may be slight variations between the illustrated interface and your specific device model's actual version. Always refer to your device's physical interface as the authoritative reference.

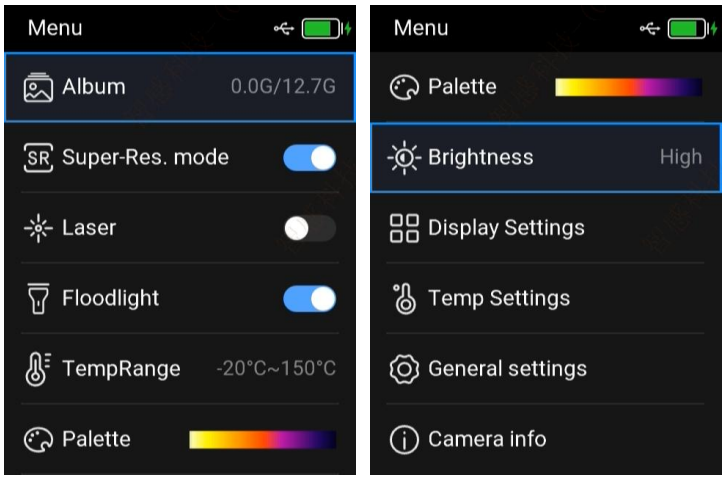


No.	Description
1	**Status Bar** (The area displaying real-time device information during operation, including: battery level, connection status, super-resolution mode status, time, etc.)
2	**Color Bar and Temperature Range** (The upper/lower limits of the color bar represent the maximum and minimum

	temperatures within the current display range respectively.) Note: When a temperature value is prefixed with "~", it indicates the device has not yet reached the preparation state for accurate measurement. Wait for this symbol to disappear before conducting target temperature measurements
3	**Emissivity** (Shows the emissivity value of the object being measured, adjustable via settings)
4	**Display Current Level/Span Mode (A/M/S)**
5	**Center Point Cursor** (Can be manually enabled/hidden via: 【Menu】>【Display Settings】>【Center Point】)
6	**Center Temperature** (Shows the temperature measurement at the crosshair center point in real-time)

2.4.2. Menu

You can view photos and videos, configure thermal camera parameters, check device information, and more in the menu.



2.5. Display Settings

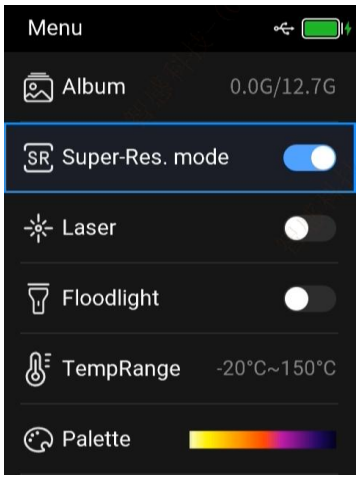
Note:
Your device will periodically perform automatic calibration to optimize image quality and measurement accuracy. During calibration, the image will briefly freeze, and you will hear a "click" sound from the shutter movement in front of the detector. The frequency of automatic calibration increases during startup or in extremely cold/hot environments. This is a necessary process to ensure optimal performance.

2.5.1. Real-Time Super-Resolution

The live preview utilizes super-resolution technology to significantly enhance image clarity and detail rendering.

• Enable this feature via [Menu] > [Super-Resolution Mode]. An icon will appear in the top-right corner of the main preview screen when activated.

• On the main preview screen, briefly press the button to toggle real-time super-resolution mode.



Note:

• Super-Resolution is only active in IR mode. If you switch image modes while this feature is enabled, it will automatically turn off (no notification will appear).

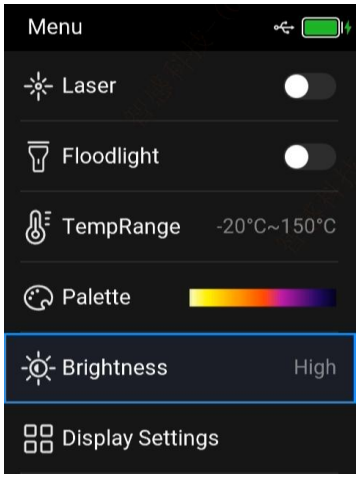
• The Super-Resolution toggle applies to both live preview and radiometric snapshot modes.

• Note: Some models in this series may not support Super-Resolution for real-time video streams. Refer to your device specifications for compatibility.

2.5.2. Brightness

The device screen brightness can be adjusted to different levels based on the usage environment.

Navigate to [Menu] > [Screen Brightness] and briefly press to cycle through brightness levels.



2.5.3. Image Mode

The device supports configurable infrared/visible-light observation modes with the following options:**IR Mode|PIP Mode|MIF Mode|VL Mode.**

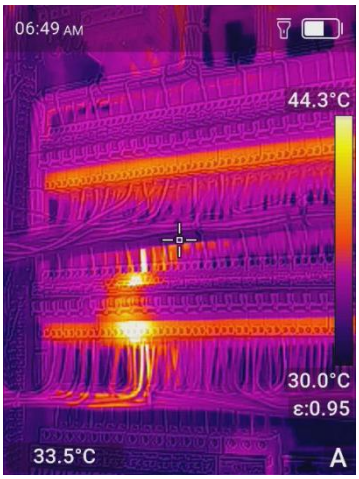
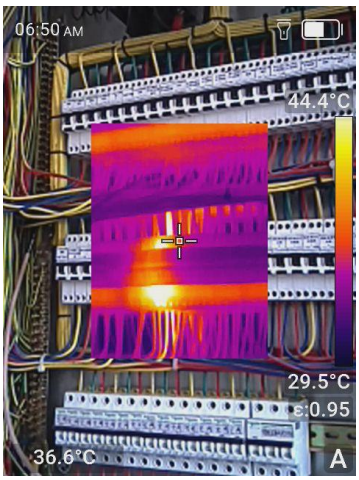
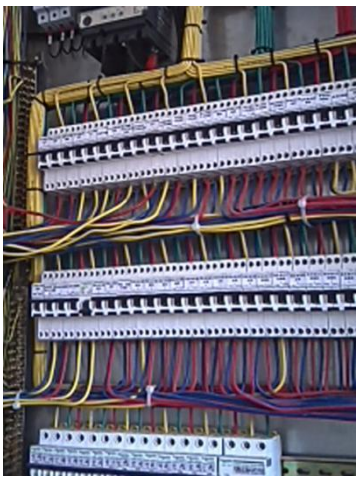
Steps:

1) **Check Current Mode**:In the main preview interface, short-press the button to display the active imaging mode:**IR | PIP | MIF | VL**

2) **Cycle Through Modes**:Press the button to toggle between modes in this order: **IR → PIP → MIF → VL → (loops back to IR)**

3) Short-press to return.

Mode	Description	Figure
IR	In pure infrared mode, the device will display only the infrared thermal imaging output.	

MIF	In fusion imaging mode, the device will simultaneously display an overlay of infrared thermal imaging and visible light channels.	
PIP	In PIP mode, the device embeds the infrared thermal imaging feed within the visible light display. To adjust: Navigate to [Menu] → [Display Settings] → [PIP Opacity], then press to select an opacity value. Lower values increase the transparency of the thermal overlay (making the visible light image more prominent).	
VL	In visible light mode, the device displays only the visible light image.	

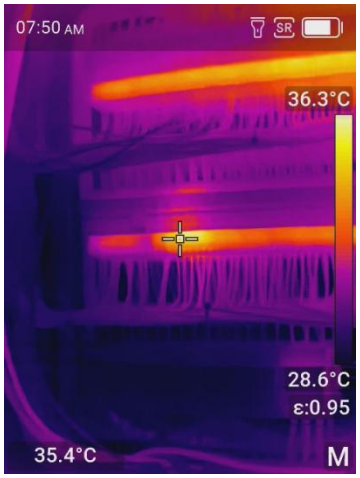
2.5.4. LevelSpan

Set the display temperature range – the color palette only applies to targets within this range. Users can adjust the range manually. LevelSpan mode options include: A/M/S modes.

- **Mode A: Auto Mode.** The temperature range is dynamically adjusted based on the highest and lowest temperatures detected on-screen.



- **Mode M: Manual Mode.** Adjust the level/span manually by setting the highest and lowest temperatures to define the range.



Steps:

1) .In live preview mode, long-press to activate LevelSpan mode selection.

2) .Short-press or to cycle through A/M/S modes.

3) .When switching to M (Manual) Mode, long-press to access Level/Span adjustment.

Four adjustment methods are available:++、+-、-+、--

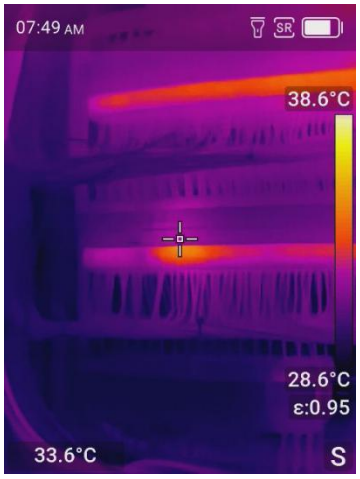
4) .Short-press or to cycle through adjustment methods.

- ++: Increase both max & min temperatures.
- +-: Increase max temp & decrease min temp.
- -+: Decrease max temp & increase min temp.
- --: Decrease both max & min temperatures.

5) .Short-press to quickly confirm temperature value changes.

- **Mode S: Semi-Auto Mode.** Dynamically sets the max/min temperature range based on the center

point temperature.



Steps:

1) .In live preview mode, long-press to enter LevelSpan mode selection.

2) .Short-press or to cycle through A/M/S modes.

3) .When switching to S (Semi-Auto) Mode, long-press to access Level/Span adjustment.

Two adjustment methods are available:

- **+**: Increase **span (△T)** (widens the range).
- **-**: Decrease **span (△T)** (narrows the range).

4) .Short-press or to toggle between + and - modes.

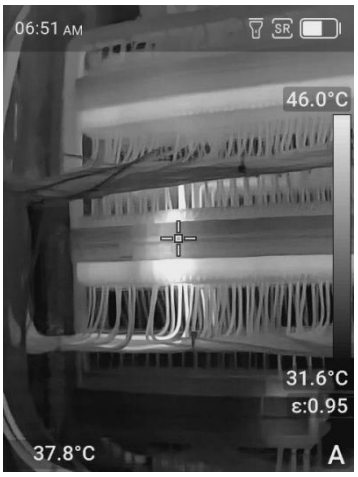
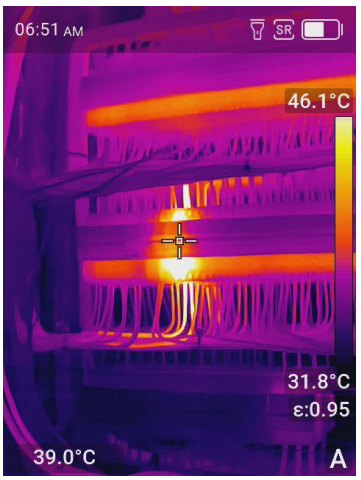
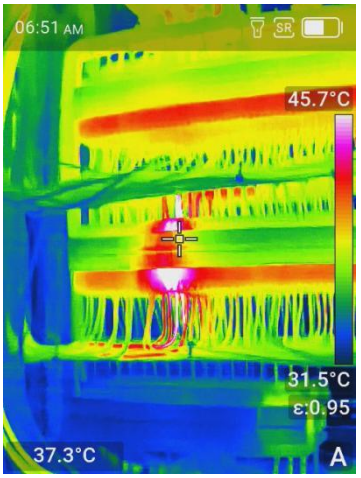
5) .Short-press to quickly confirm △T value changes.

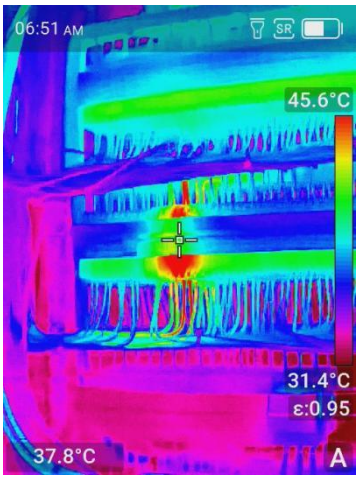
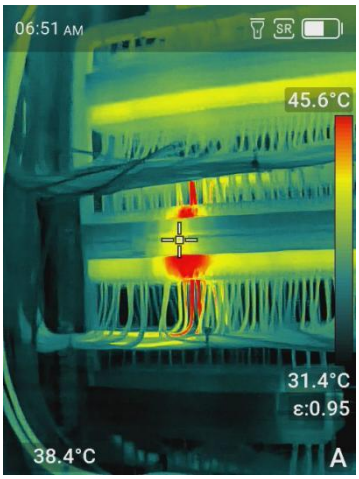
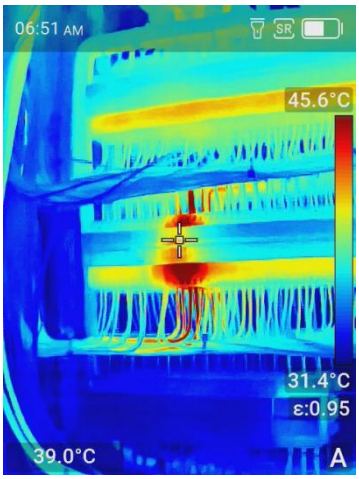
2.5.5. Color Palette

The color palette is a visualization scheme that represents temperature distribution through color gradients. This device provides multiple preset palettes optimized for different detection scenarios.

To switch palettes, navigate to [Menu] → [Color Palette] and short-press for quick selection.

Color palette	Description	Figure

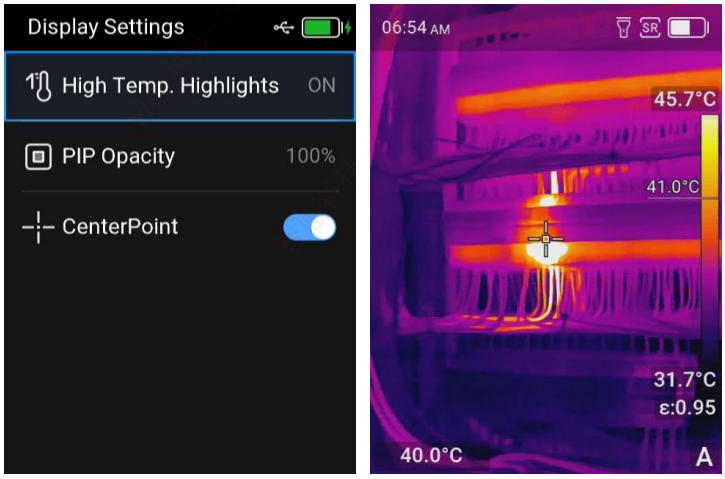
White Hot	In this mode, high-temperature areas are displayed in bright tones on the screen.	
Iron Red	In this mode, target objects are displayed with a gradient color scheme that mimics the characteristic appearance of heated metal.	
Arctic	In this mode, a multi-color gradient is applied to visualize temperature distribution, with high-temperature areas displayed in bright tones on the screen.	

Rainbow 1	This mode visualizes temperature distribution using a multi-color gradient, ideal for scenarios with minimal thermal contrast. It enhances detection of both high- and low-temperature targets by displaying: High-temperature zones in bright red, Low-temperature zones in dark red, Ambient/neutral areas in muted tones (e.g., dark blue or black).	
Hot Iron	In this mode, high-temperature areas are displayed in red on the thermal imaging screen, while the remaining regions appear in dark green.	
Rainbow 2	This mode utilizes a multi-color gradient to display temperature distribution, specifically optimized for scenarios with minimal thermal contrast.	

2.5.6. High-Temperature Highlight

In the Target Enhancement function, when the target temperature exceeds the preset threshold, the target area will be highlighted in a distinctive color.

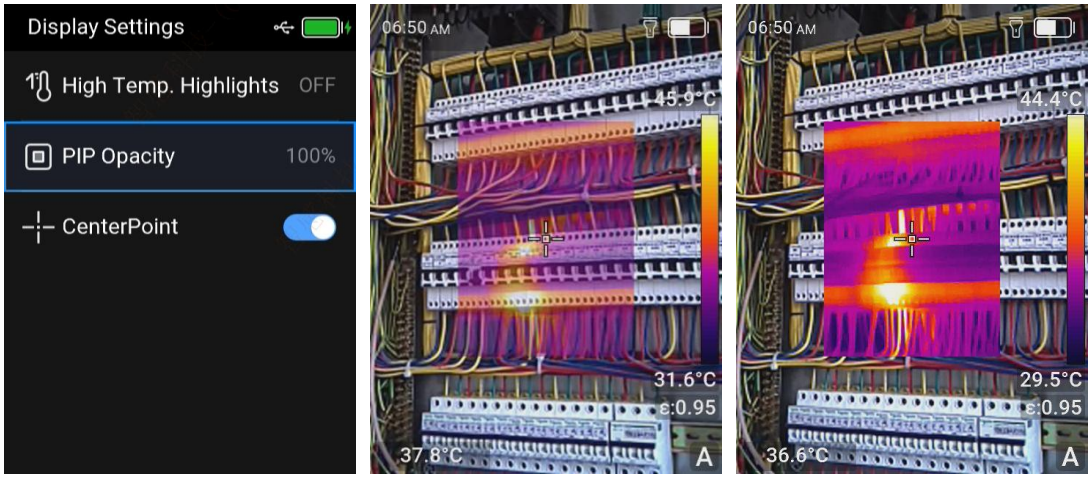
Parameter Configuration Path:
Menu → Display Settings → High-Temperature Highlight



2.5.7. PIP Opacity

In Picture-in-Picture (PIP) display mode, users can adjust the transparency level of the infrared thermal imaging overlay on the visible light image to enhance target identification.

Configuration path:
[Menu] → [Display Settings] → [PIP Opacity]

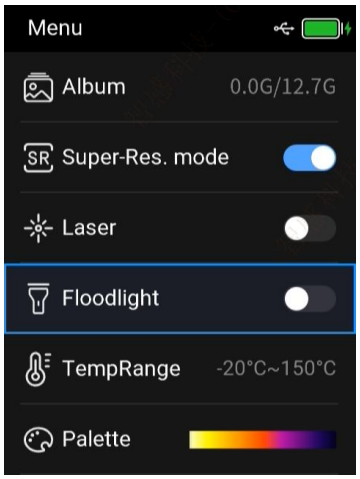


2.6. Lighting Settings

In dim or complex environments, observation can be assisted by activating the LED light or laser pointer.

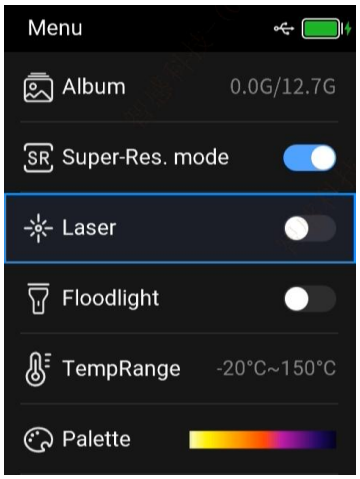
2.6.1. **LED Illuminator**

• Enable the illuminator via: [Menu] → [Floodlight] → [ON/OFF]
• In live preview mode:Short press power button to activate the LED light source



2.6.2. Laser

•Activate the laser via: [Menu] → [Laser] → [ON/OFF]
•In live view mode:Short press or long press the trigger button to enable the laser source.
• WARNING:
Laser radiation may cause eye injury, skin burns, or ignite flammable materials.
Ensure no personnel or combustible substances are within the laser's path before activation.

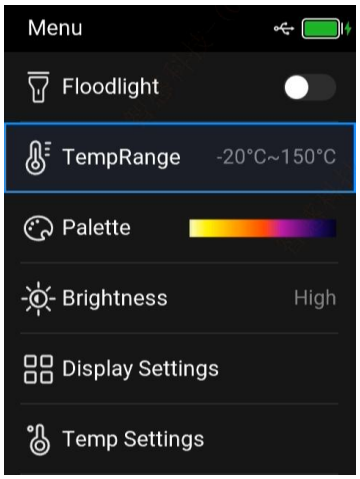


2.7. Temperature Measurement

This device measures the temperature distribution across the entire scene and supports real-time display of measurement frames (such as area boxes and center points) on the screen. Measurement accuracy can be improved by adjusting the relevant parameters.

2.7.1. Temperature Measurement Range

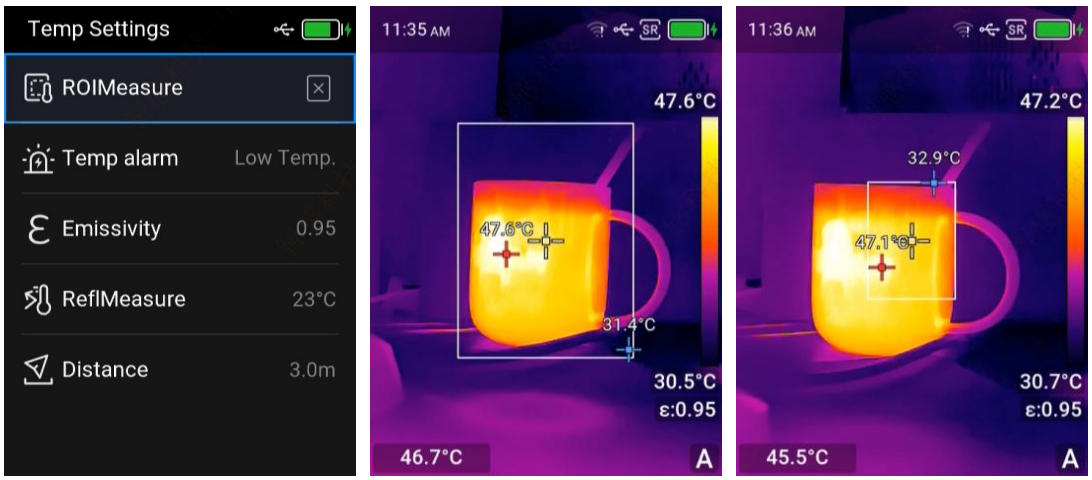
This device features pre-configured multi-range temperature measurement scales, with selectable ranges varying by specific model.
Operation Guidelines:
•For precise measurements:Manually select the appropriate range based on the target object's temperature
•For unknown or widely varying temperatures:Enable AUTO mode for automatic range switching58
Configuration Path:[Menu] → [Temperature Range]



2.7.2. Area Measurement

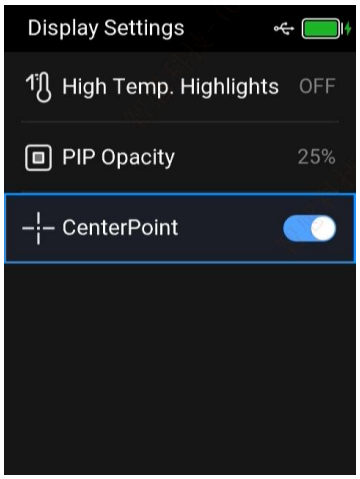
The device displays a measurement area at the center of the screen with adjustable sizes: Large (full-screen), Medium, and Small. Within the measurement area, the system dynamically marks the highest and lowest temperature points and displays real-time temperature values.

Configuration Path:
[Menu] → [Temperature Settings] → [ROIMeasure]



2.7.3. Center Point Measurement

Displays a targeting marker and real-time temperature reading at the center of the screen.
Configuration Path:
[Menu] → [Display Settings] → [Center Point]



2.7.4. Emissivity

Emissivity quantifies the ratio of an object's radiant energy to that of an ideal blackbody at the same temperature. Its inverse physical parameter is reflectivity, which determines the energy distribution between an object's self-emission and reflected ambient radiation.

Key Characteristics:
• Higher emissivity → Stronger infrared radiation capability
• Lower emissivity → Weaker infrared radiation capability

Emissivity is the most critical and precise measurement parameter that needs to be set. If the emissivity setting is too low, the importance of the reflection temperature parameter will significantly increase. When measuring from a distance, it is necessary to simultaneously pay attention to relevant parameters such as target distance.

If the parameter value is uncertain, it is recommended to use the default setting: 0.95

2.7.5. Reflected temperature

Reflected temperature is the parameter used to compensate for ambient radiation energy reflected by the measured object toward the thermal imager. This value is directly correlated with the object's reflectivity properties.

If the emissivity of the target being tested is low and the actual temperature is much lower than the

temperature of its reflection source, the reflection temperature value should be set to the temperature value of the reflection source (if on-site testing conditions permit, try to avoid reflection interference as much as possible, which can greatly improve measurement accuracy).

If the parameter value is uncertain, it is recommended to use the default setting: 20℃

2.7.6. Distance

The actual distance between the thermal imager and the measured target.

Operational Guidelines:

- **Short-range measurements:**Use default settings when:
  • Distance < minimum required for accurate temperature measurement
  • Distance < thermal imager's maximum accurate detection range1
- If the parameter value is uncertain, it is recommended to use the default setting:3m

2.7.7. Temperature Alarm

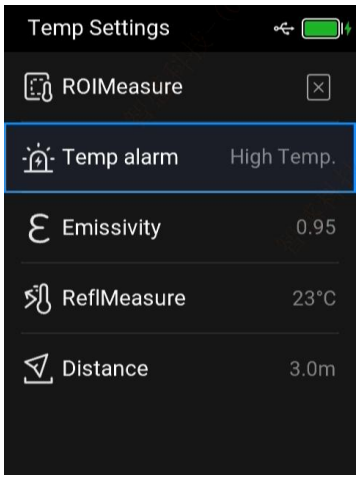
After setting the alarm rules, when the temperature triggers the condition, the device will automatically trigger an alarm and display the alarm identifier.

1）. In the real-time observation interface, press the menu button to bring up the function menu;

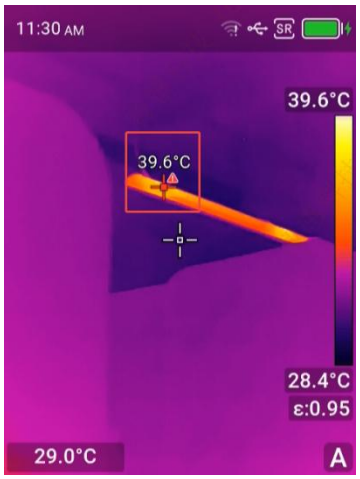
2）. Select the 'TemperatureSettings' option to enter' Temperature Alarm ';

3）. Select the 'High Temperature Alarm' or 'Low Temperature Alarm' switch to activate the alarm function;

4）. LED alarm: When the target temperature exceeds the alarm threshold, the LED indicator light will flash.







Temperature Alarm Configuration Procedure

- **Alarm Setup**： Select **[Temperature Alarm]** to configure alert rules.
- **Threshold Setting**： Enter **[High-Temp Alarm]** or **[Low-Temp Alarm]** submenu to set temperature thresholds.

Alarm Trigger Conditions:

- **Red** : Triggers when measured temperature **exceeds** high threshold.
- **Blue**: Activates when measured temperature **falls below** low threshold.

2.8. Image Capture & Storage

Notes:
No photo/video capture available while menu interface is displayed.
Recording disabled when device is connected to a computer.

2.8.1. Photo Capture

View the live preview screen and briefly press the trigger button to capture and save the current image to the local album.

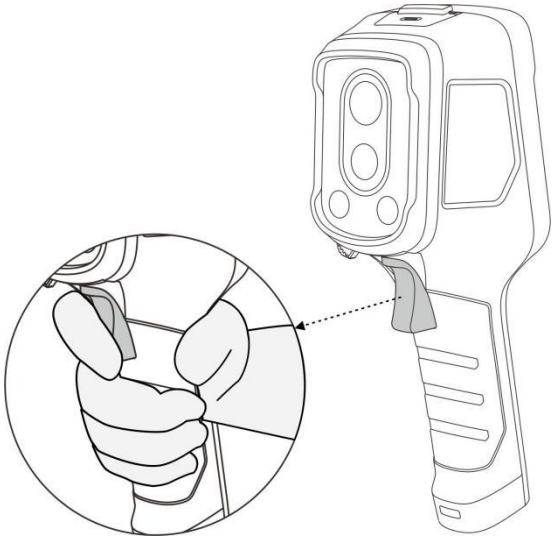


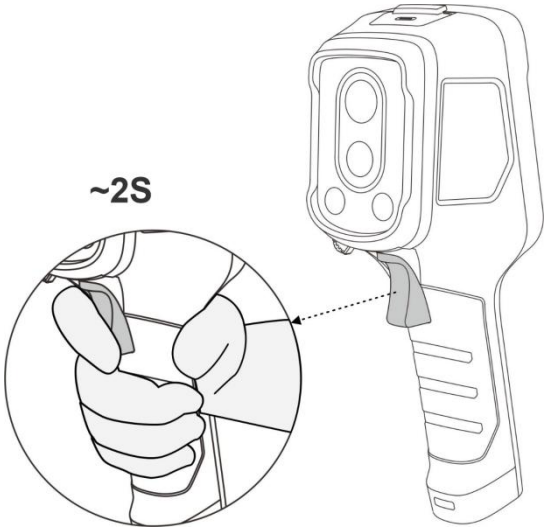
Image Storage:
Saved images include both infrared and visible-light versions.The resolution of visible-light images can be adjusted.

Configuration Path:
[Menu] → [General Settings] → [Storage Parameters] to set the visible-light resolution.

2.8.2. Video Recording

View the live preview screen and long-press the trigger button to start recording (timer will activate).

Short-press the trigger button or press the return key to stop and save the video to the local album
Video Specifications:Infrared-only recording (no visible-light video).



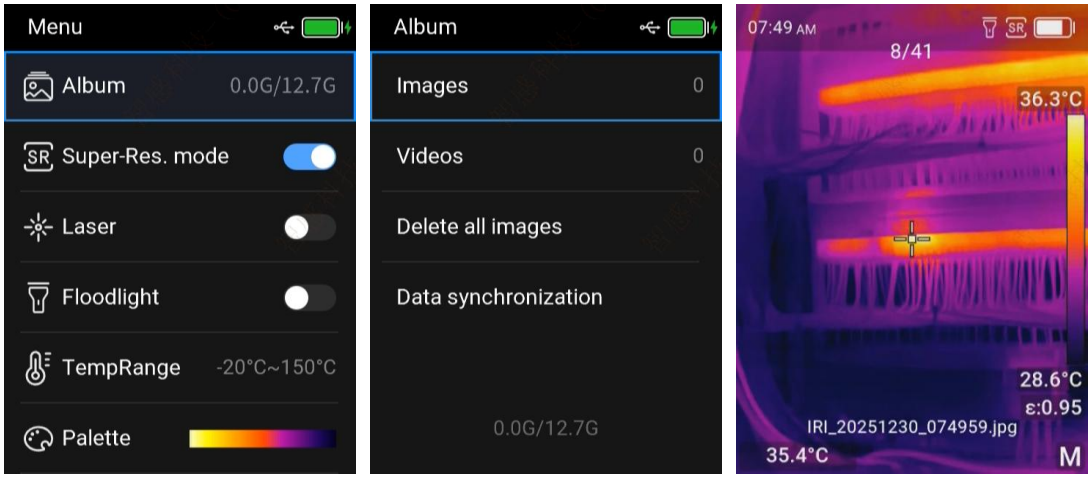
Supported formats:
.irgd (proprietary thermal data format)
.mp4 (standard playback format)

Configuration Path:
[Menu] → [General Settings] → [Storage Parameters] to select infrared video format.

2.8.3. View/Delete Files

Photos and videos captured by the device are automatically saved to the local album.Access Method:In live preview mode, briefly press to enter:[Menu]→ [Gallery]

- **Browse files** (Supports thumbnail/preview mode)
- **Delete files** (Single/multi-select deletion available)
- **Check remaining storage** (Displays used/available space in GB)



Steps:

1）.In live preview mode, short-press to enter the menu.Select [Gallery] from the parameters.

2）.Short-press to select and view image or video files.

- Viewing Images:
  - **Short-press** to toggle between infrared and visible-light images.
  - **Short-press** to view the corresponding visible-light or infrared image (if paired).
- Viewing Videos:
  - **Short-press** to toggle between infrared videos.
  - **Short-press** to **play/pause** or **delete** the video.

3）.Short-press to return to the previous menu.

2.8.4. Export Files

- Export via Analysis Software

If the device supports WiFi and AP hotspot functions, files can be downloaded and saved locally through the "Air Import" feature in the PC analysis software

Steps:

1）.Launch the PC analysis software.

2）.Enable the RTSP switch on the device or activate AP hotspot mode.

3）.Ensure the PC and device are on the same local network, or connect the PC to the device's AP

hotspot.

4）.Select the target file in the PC analysis software, then click the Download button to save it locally for viewing.

- Export via Computer

Steps:

1）**Connect the Device:**

- Use the included USB cable to connect the device to the computer.
- Select "**USB Storage Mode**" when prompted on the device.

2）**Copy Files:**

- Open the recognized device drive on the computer.
- **Copy and paste** video or image files to the local computer for viewing.

2.9. General Settings

2.9.1. WiFi

Connect Device to Wireless Network via Wi-Fi (for Data Transfer & OTA Updates)

Steps:

Access Settings:

- In the live preview interface, briefly press  to enter **[General Settings] > [Wi-Fi]**.

Connect to Network:

- Turn on the **Wi-Fi switch** to scan for available networks.
- Select the desired network and enter the password to connect.

Note:

For **reliable Wi-Fi signal and stable data transmission**, ensure:

- The connection distance is **within 10 meters (33 feet)**.
- There are **no obstructions** (e.g., walls, large objects) between the device and the router.



- **Device Hotspot Streaming (RTSP Support)**

Applicable Models: Select models support **hotspot streaming** via RTSP (Real-Time Streaming Protocol).

Steps:

1）.**Enable RTSP:**

- Activate the RTSP function in the device settings.

. 2）.**Network Requirements:**

- Ensure the **device and computer are on the same local network** (LAN).

. 3）.**Remote Control & Analysis:**

- Stream real-time data to **infrared analysis software** for remote monitoring and diagnostics.

Note:

- RTSP provides low-latency streaming for time-sensitive applications.
- Firewall/router settings may require adjustment for seamless connectivity.

Steps:

1）.**Device Setup:**

- Enable **Wi-Fi** and **RTSP** functions on the device.

2）.**Network Connection:**

- Connect both the **device** and **PC** to the **same local network (LAN)** via Wi-Fi.

3）.**Software Configuration (PC):**

- Launch the **infrared analysis software** on your computer.

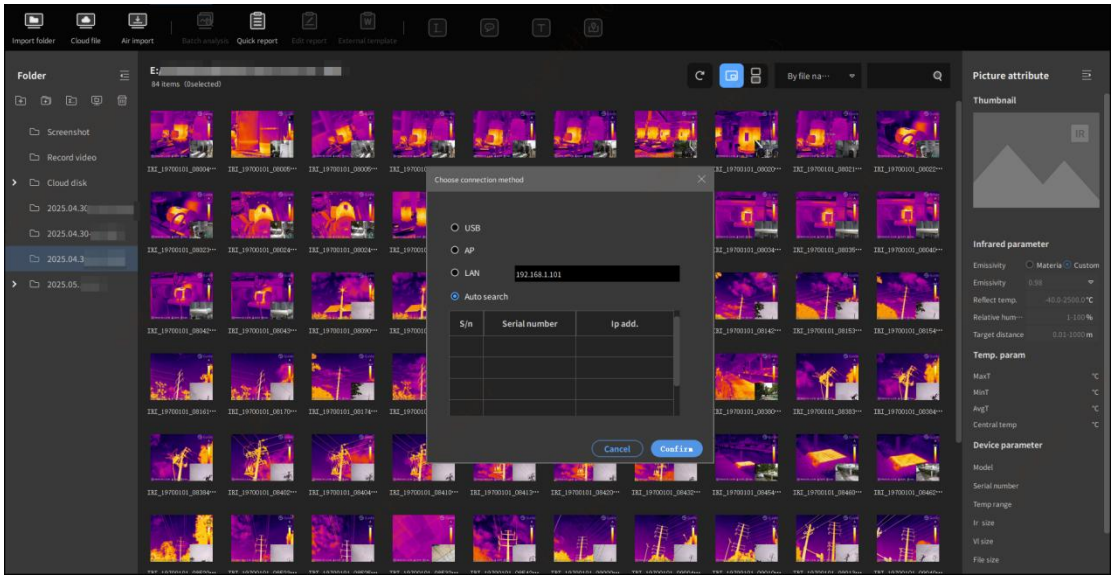
- Navigate to **[Video Analysis] > [Connection Management]** and select **[Auto Search]**.

4）.**Device Pairing:**

- The software will display all compatible devices on the same network.
- **Locate your device**, select it, and click **"Confirm"** to establish the connection.

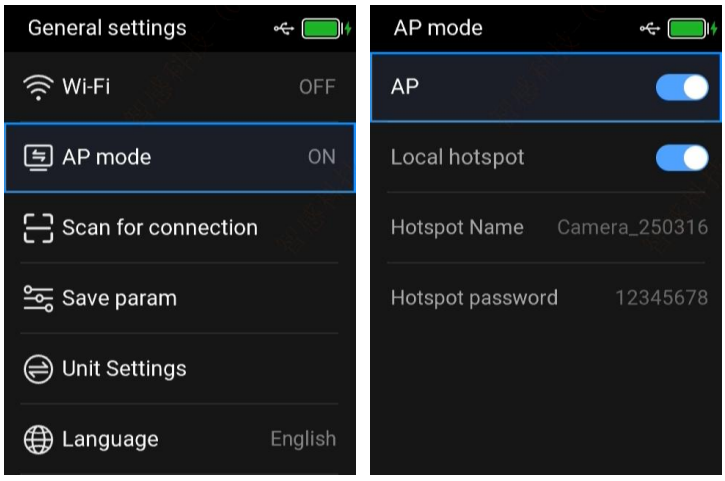
Streaming & Data Transfer:

- Once connected, the device will begin **real-time infrared video streaming** and **data transmission**.



2.9.2. AP Mode

Enables the device to function as a **Wi-Fi hotspot**, primarily designed for **data transmission** and **real-time infrared video streaming** to PC-based infrared analysis software or mobile applications.



Steps:

1）.**Enable AP Mode on Device:**

- Navigate to **[Menu] > [General Settings] > [AP Mode]**
- Toggle on both **AP Mode** and **Hotspot** functions

2）.**Connect to Device Hotspot:**

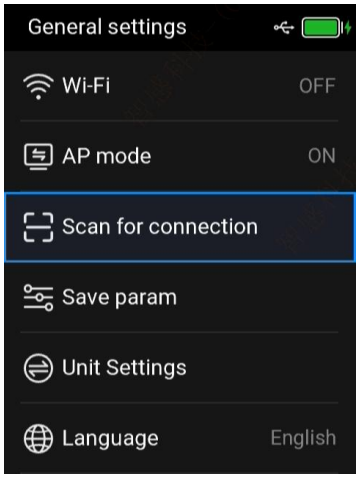
- On your **PC or mobile device**, search for the device's Wi-Fi network (SSID)
- Enter the hotspot password to establish connection

3）.**Initiate Data Transmission:**

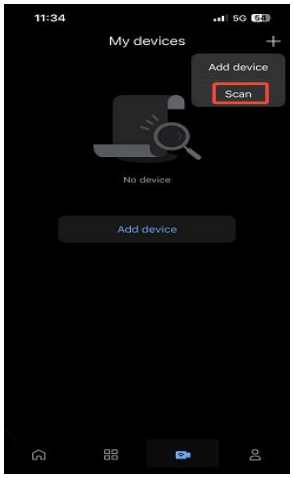
- Launch the **PC infrared analysis software** or **mobile APP**
- Connect to the device to enable:
  ✓ Real-time video streaming
  ✓ Wireless data transfer (e.g., remote file import)

2.9.3. Scan for Connection

Enables rapid pairing between the device and mobile APP for **data transmission**, supporting **real-time infrared video streaming** to the APP's analysis interface.







（APP）

Steps:

1）.**Generate QR Code on Device:**

- Navigate to **[Menu] > [General Settings] > [Scan for Connection]**
- Activate the **QR code display**.

2）.**Scan QR Code via APP:**

- Open the **mobile APP analysis software**

- Use the **"Scan"** function to capture the device's QR code.

3）.**Establish Connection & Functions:**

- Upon successful scanning, the APP will **auto-connect** to the device
- Enabled features include:
  ✓ Real-time video streaming
  ✓ Remote album access (data transfer)

2.9.4. Save Parameters

Configures infrared video storage formats and visible light resolution settings.

Configuration Options:

Infrared Video Storage Format (Selectable):

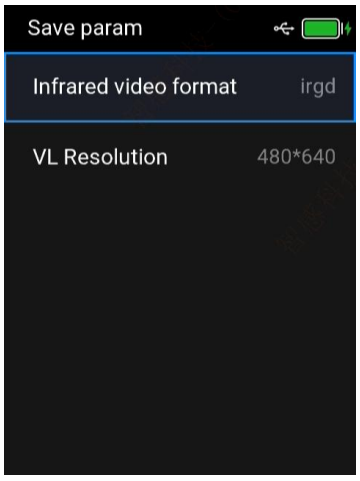
- **IRGD**: Video format containing embedded temperature data
- **MP4**: Standard video format without temperature data

Visible Light Resolution:

- Adjustable resolution settings for visible light imaging

Access Path:

- In live preview mode, briefly press to navigate to:
  [Menu] > [General Settings] > [Save Parameters]

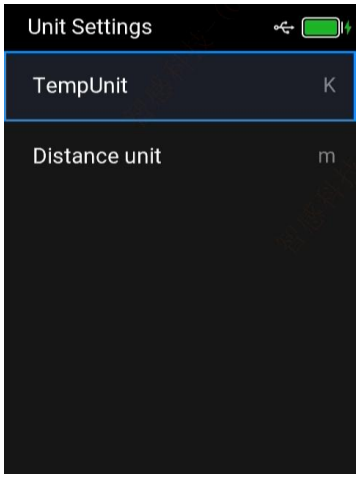


2.9.5. Unit Settings

Configures temperature and distance measurement units for device operations.

In live preview mode, briefly press to navigate:

[Menu] > [General Settings] > [Unit Settings]



2.9.6. Language Settings

Configures the system display language for device interfaces.

In live preview mode, briefly press to navigate:

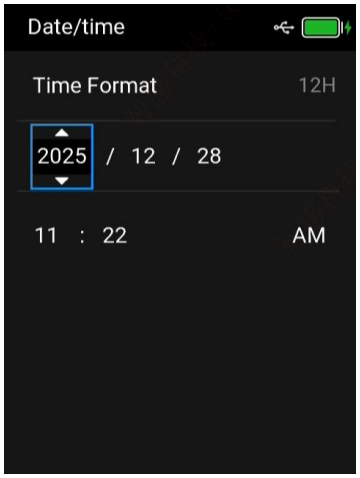
[Menu] > [General Settings] > [Language]

2.9.7. Date & Time Settings

Configures system clock display formats and enables manual time synchronization.
Time Format:12-hour/24-hour

In live preview mode, briefly press to navigate:

[General Settings] > [Date & Time]



2.9.8. USB Mode Settings

Configures **USB connection protocols** for device-to-computer data transfer and display projection.

In live preview mode, briefly press to navigate:

[General Settings] > [USB Mode]

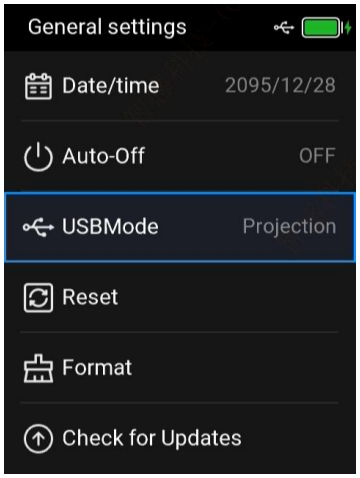
Configuration Options:

U Disk Mode

- Enables **mass storage** functionality (file transfer via USB)
- Compatible with standard formats15

Screen Casting Mode

Activates **real-time display projection**



- **USB mode:**

Using the device as storage space, the computer can directly access the data files inside the device through a USB cable.

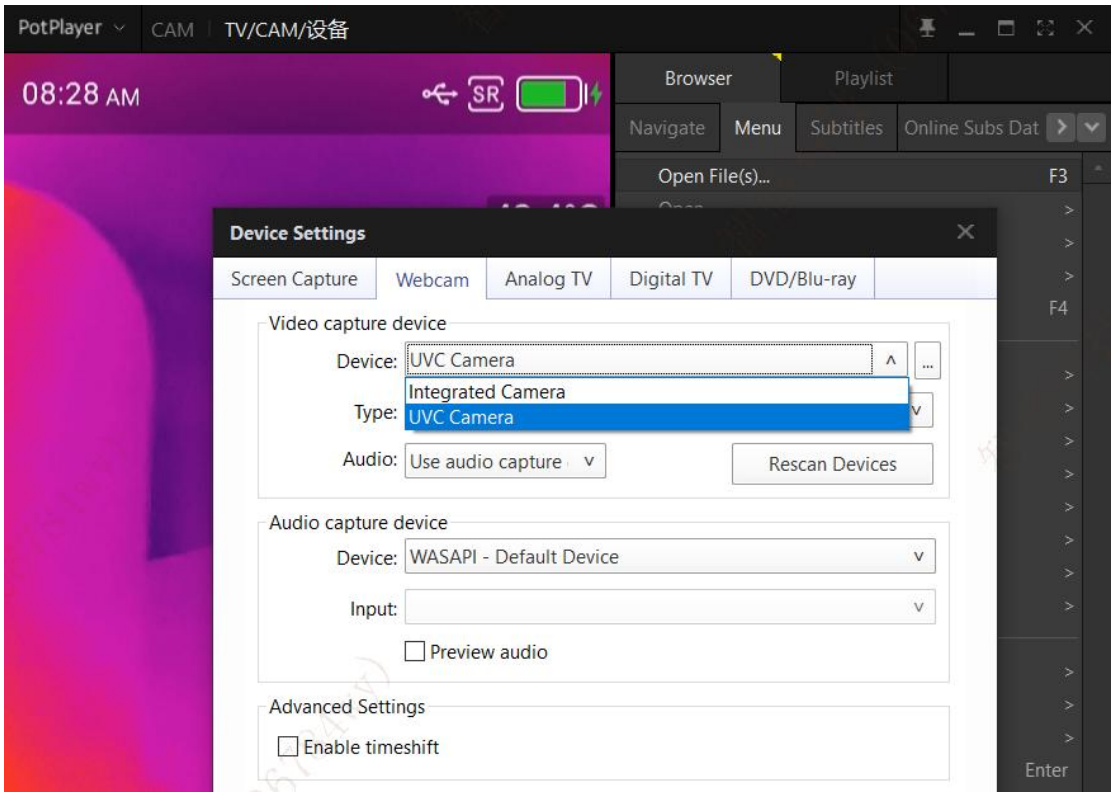
- **Projection mode:**

Simulate USB camera devices by loading specific software drivers (such as Potplayer). When the device is connected to a computer, the driver program will convert the device's video signal into UVC standard format and connect it to the system via USB. After receiving the video signal, the system will decode it and display it on the software screen to achieve the projection effect.

The screen casting steps are as follows:

1）. On the device side, select "Menu" - "General Settings" - "USB Mode" and set it to "Projection Mode".

2）. Start Potplayer, [Open] - [Device Settings] - [Camera] select "UVC Camera" to open the device.



2.9.9. Reset Settings

Restores all **parameter configurations** to factory default state.
Warning: This operation will **permanently erase** customized settings—ensure critical data is backed up prior to execution.

- In live preview mode, briefly press to navigate:
  [Menu] > [General Settings] > [Reset Settings]

2.9.10. Format Storage

Permanently erases all stored files (photos/videos/other data) from the device storage.
Warring: Formatting will permanently delete all images and other data, please handle with caution.

- In live preview mode, briefly press to navigate:
  [Menu] > [General Settings] > [Format Storage]

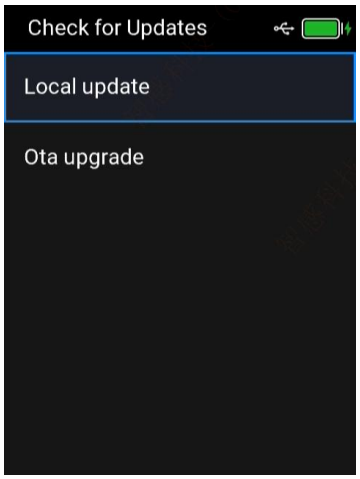
2.10. Update

Verifies the current firmware version and supports both OTA (Over-The-Air) updates and local

updates.

- In live preview mode, briefly press to navigate:

  [Menu] → [General Settings] → [Check for Updates]



2.10.1. Local Update

Performs a firmware upgrade using an update package provided by the manufacturer.

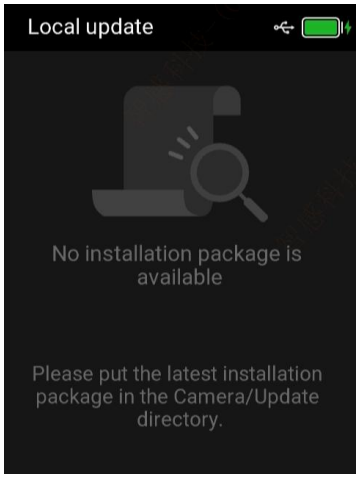
Steps:

1）Connect the device to a computer via USB cable.

2）Copy the update package to the /Camera/Update directory.

3）On the device, tap "Check for Updates" to detect the latest update package.

4）Tap "Install Update" to proceed. The device will reboot automatically after completion.



2.10.2. OTA Update

Enables firmware upgrades via Wi-Fi when the device is connected to the internet

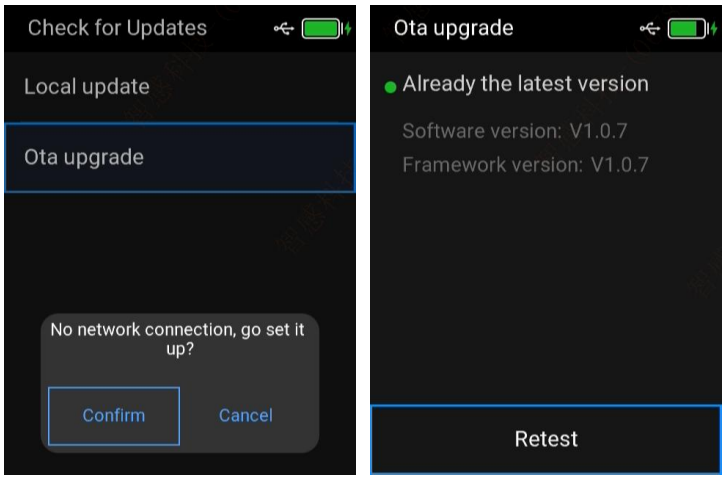
Steps:

1）Navigate to [Menu] → [General Settings] → [Wi-Fi] to connect the device to a network, then tap "Check for Updates" to detect the latest firmware package.

2）Tap "Download & Install" to proceed. The device will reboot automatically after completion

Notes:

- Ensure stable internet connectivity during the OTA process.
- Maintain sufficient battery level to avoid interruption.
- Contact the manufacturer if any issues occur during the update

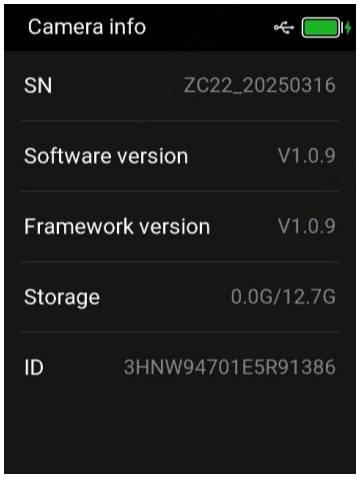


2.11. Camera info

Displays detailed device information, including firmware version and serial number

Path:

Navigate to [Menu] → [Camera info]



2.12. Client Software (If Applicable)

Camera that support Wi-Fi and hotspot functions can be connected to PC analysis software and mobile apps.

Scan the QR code to download the application, and you can achieve real-time preview, snapshot capture, video recording and other functions.

Notes:

Not all device models in this series support the mobile applications, software, and all their functions mentioned (or not mentioned) in this manual. Please refer to the user manuals of each application software for specific compatibility.

2.13. Lens Protection

Factory Protection:

A protective lens cover is pre-installed to safeguard the camera optics during shipping and storage.

Important Notice:

Manually slide open the lens cover before use.

2.14. Regarding Calibration

To ensure the accuracy of the equipment, we recommend that you send it back for professional calibration once a year. For specific maintenance site information, please contact your local dealer for consultation.

2.15. Regarding Maintenance

Troubleshooting: If there is any abnormality with the product, please contact the dealer or nearest

service center immediately. The company shall not be held responsible for any problems caused by unauthorized repair or maintenance.

Cleaning method: If necessary, gently wipe the surface of the equipment with a clean soft cloth.

Usage guidelines: Using equipment in a manner not specified by the manufacturer may result in the failure of protective functions.

3. Appendix

3.1. Emissivity Table of Common Materials

Materials	Emissivity
Wood	0.85
Water	0.96
Brick	0.75
Stainless steel	0.14
Adhesive tape	0.96
Aluminum plate	0.09
Copper plate	0.06
Black anodized aluminum	0.95
Human skin	0.98
Asphalt	0.96
PVC	0.93
Black paper	0.86
Polycarbonate	0.8
Concrete	0.97
Oxidized copper	0.78
Cast iron	0.81
Rust	0.8
Gypsum	0.75
Paint	0.9
Rubber	0.95
Soil	0.93

3.2. Common Troubleshooting Guide

Fault symptom	Root Causes	Corrective Measures
Failure to power on	Low battery	Recharge the battery before using it again
	The plug of the external power supply is not inserted properly	Unplug the power plug, reinsert and push it into place
The device suddenly shuts down	Automatic shutdown enabled	Set the automatic shutdown interval to never shut down
There is a significant deviation between the battery level indication and actual usage	Battery depleted	Plug in the charging cable
	Battery lifespan expired	Replace with a new battery
Infrared image blurring	The lens is covered with water mist or contaminated	Clean the lens with professional equipment
	The temperature measurement range is incorrect	Not selecting the correct temperature measurement gear, switch back to the corresponding temperature measurement gear
Visible light image is not clear	The environment is too dark	Take appropriate lighting measures
	Visible light lens has water mist or contamination	Use professional equipment to clean visible light lenses
Inaccurate temperature measurement	Incorrect parameter settings related to temperature measurement	Change parameter settings or directly restore default parameter values
	Immediately measure the temperature upon startup	To ensure temperature measurement accuracy, we recommend that you turn on the thermal imager and wait for 5-10 minutes before starting the temperature measurement
	Long-term lack of calibration	To obtain accurate temperature measurement results, we recommend that you calibrate once a year
The file cannot be stored	Insufficient remaining storage space	Delete images and video files from the gallery