



**FIREATTACK F120**  
**Firefighting Thermal Camera**  
User Manual V1.1

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For the device without a supplied power adapter, use the power adapter provided by a qualified manufacturer. Refer to the product specification for detailed power requirements.

For the device without a supplied battery, use the battery provided by a qualified manufacturer. Refer to the product specification for detailed battery requirements.

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The Fireattack F120 is



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## Symbol Conventions

The symbols that may be found in this document are defined as follows.

| Symbol   | Description   |
|--|---|
|  <b>Note</b>    | Provides additional information to emphasize or supplement important points of the main text.   |
|  <b>Caution</b> | Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results. |
|  <b>Danger</b>  | Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.   |

## Safety Instructions

Please read all the safety information carefully before using. These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

### Laws and Regulations

Use of the product must be in strict compliance with the local electrical safety regulations.

### Transportation

- Keep the device in original or similar packaging while transporting it.
- Keep all wrappers after unpacking them for future use. In case of any failure occurred, you need to return the device to the factory with the original wrapper. Transportation without the original wrapper may result in damage on the device and the company shall not take any responsibilities.
- Do not drop the product or subject it to physical shock. Keep the device away from magnetic interference.

### Power Supply

- The input voltage should meet the limited energy circuit (5 VDC, 2 A) according to the IEC61010-1 standard. Please refer to technical specifications for detailed information.

- Make sure the plug is properly connected to the power socket.
- DO NOT connect multiple devices to one power adapter, to avoid overheating or fire hazards caused by overload.
- For the device without a supplied power adapter, use the power adapter provided by a qualified manufacturer. Refer to the product specification for detailed power requirements.

### Battery

- Improper use or replacement of the battery may result in explosion hazard. Replace with the same or equivalent type only. Dispose of used batteries in conformance with the instructions provided by the battery manufacturer.
- Do not charge other battery types with the supplied charger. Confirm there is no flammable material within 2 m of the charger during charging.
- For long-term storage of the battery, make sure it is fully charged every half year to ensure the battery quality. Otherwise, damage may occur.
- DO NOT place the battery near heating or fire source. Avoid direct sunlight.
- DO NOT swallow the battery to avoid chemical burns.
- DO NOT place the battery in the reach of children.
- CAUTION: Risk of explosion if the battery is replaced by an incorrect type.
- Do not dispose of the battery into fire or a hot oven, or mechanically crush or cut the battery, which may result in an explosion.
- Do not subject the battery to extremely low air pressure, which may result in an explosion or the leakage of flammable liquid or gas.
- When the device is powered off and the RTC battery is full, the time settings can be kept for 90 days.
- In the first use, power on the device and charge the RTC battery with the lithium battery for more than 10 hours.
- The battery voltage is 3.7 V, and the battery capacity is 5400 mAh.

### Maintenance

- If the product does not work properly, please contact your dealer or the nearest service center. We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.
- Wipe the device gently with a clean cloth and a small quantity of ethanol, if necessary.
- If the device is used in a manner not specified by the manufacturer, the protection provided by the device may be impaired.
- Please notice that the current limit of USB 3.0 PowerShare port may vary with the PC brand, which is likely to result in incompatibility issue.



Therefore, it's advised to use regular USB 3.0 or USB 2.0 port if the USB device fails to be recognized by PC via USB 3.0 PowerShare port.

- Your camera will periodically perform a self-calibration to optimize image quality and measurement accuracy. In this process the image will pause briefly and you will hear a “click” as a shutter moves in front of the detector. The self-calibration will be more frequent during the startup or in very cold or hot environments. This is a normal part of operation to ensure optimum performance for your camera.

### Using Environment

- DO NOT expose the device to extremely hot, cold, dusty, corrosive, saline-alkali, or damp environments. Make sure the running environment meets the requirement of the device. The operating temperature shall be -20 °C to 60 °C (-4 °F to 140 °F), and the operating humidity shall be less than 95%.
- Place the device in a dry and well-ventilated environment.
- DO NOT expose the device to high electromagnetic radiation or dusty environments.
- DO NOT aim the lens at the sun or any other bright light.
- When any laser equipment is in use, make sure that the device lens is not exposed to the laser beam, or it may burn out.
- The device is suitable for indoor conditions.
- The pollution degree is 2.
- The protection level is IP67.

### Emergency

If smoke, odor, or noise arises from the device, immediately turn off the power, unplug the power cable, and contact the service center.

### COMPLIANCE NOTICE

The thermal series products might be subject to export controls in various countries or regions, including without limitation, the United States, European Union, United Kingdom and/or other member countries of the Wassenaar Arrangement. Please consult your professional legal or compliance expert or local government authorities for any necessary export license requirements if you intend to transfer, export, re-export the thermal series products between different countries.

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The Quick Guide is available for download at

[www.fireattack.net](http://www.fireattack.net)

# 1 Overview

## 1.1 Introduction

The professional firefighting thermal camera is a product designed for firefighting and life rescue. It is easy to operate even with gloves. It supports multiple display modes for different on-site purposes, for example firefighting, hidden fire point searching, life rescue, building analysis, etc. These modes can help fire and rescue personnel detect and understand the temperature status of the scene and detect life signs more efficiently.

## 1.2 Main Function

### *Multiple Image Display Modes*

The camera supports multiple image display modes suitable for different scenes and targets. It helps quickly distinguish targets from rest of the objects. Some modes also offer image temperature for reference.

### *Target Zooming*

The camera supports 3 zoom ratios for users to check on details from a distance.

### *On-site Image Capture*

The camera supports image capture and storage.

### *Hotspot*

The camera provides hotspot function for connecting to mobile device for data transmission.

### *Client Software Connection*

- Mobile Device: Use the app to view live image, capture snapshots, and record videos on your phone. You can also, analyze pictures offline, generate and share a report via the app.
- PC: Use the analysis software to analyze pictures offline professionally on your PC.

## 1.3 Appearance

### 1.3.1 Component Description

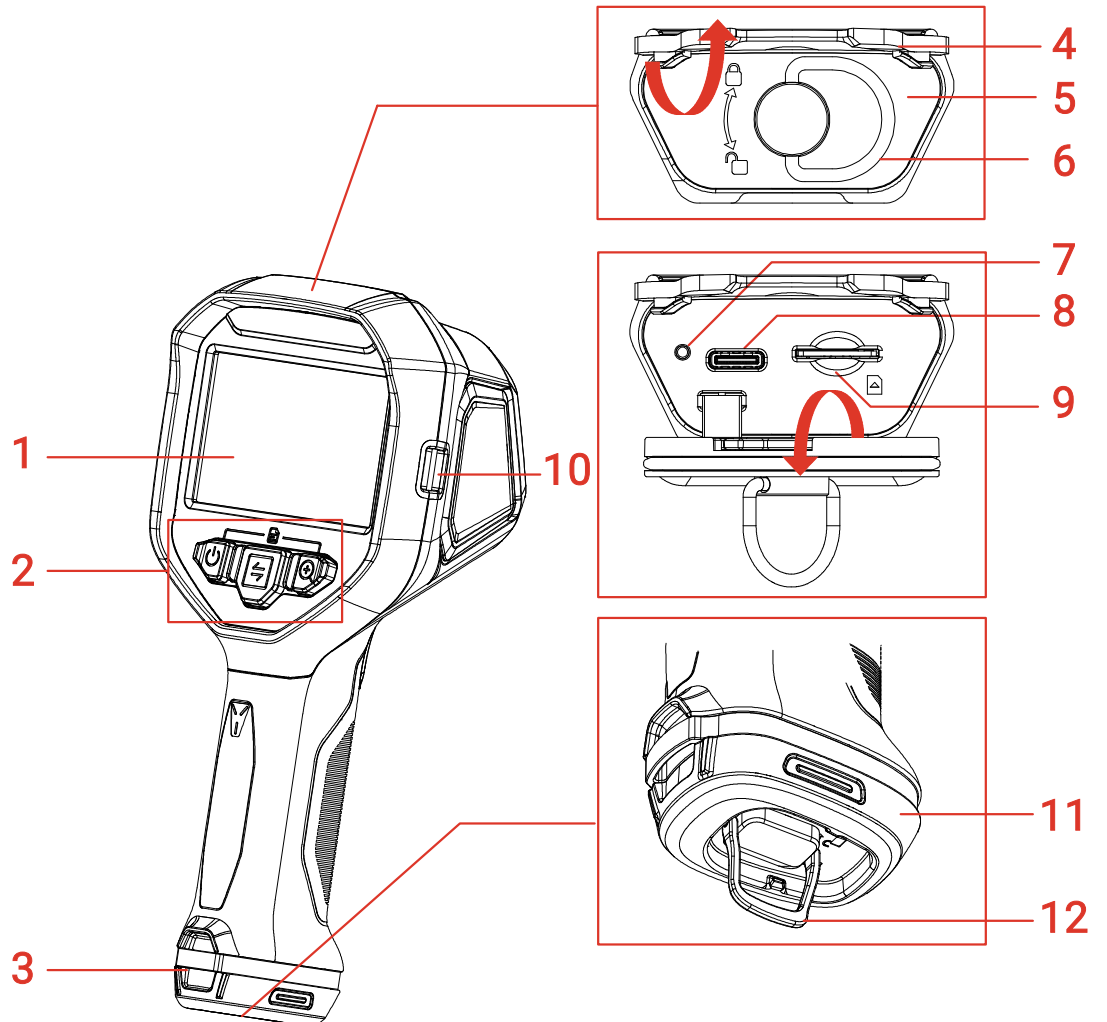


Figure 1-1 Appearance (Front View)

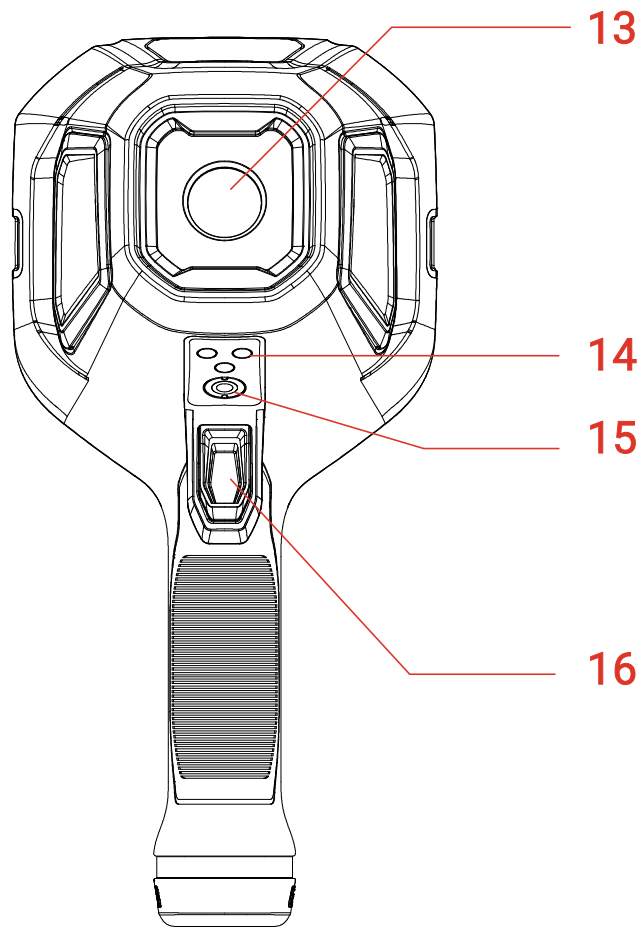


Figure 1-2 Appearance (Rear View)

Table 1-1 Appearance Description

| No. | Part Name                      | Description  |
|-----|--------------------------------|--|
| 1   | Screen                         | Display view and operation menu.   |
| 2   | Buttons                        | Operate the camera. See <b>1.3.2 Button Operation</b> for detailed instructions.   |
| 3   | Lanyard Mounting Point         | Mount lanyard for easy carrying. See <b>3.5.2 Install Lanyards</b> for lanyard mounting guide.   |
| 4   | Rubber Cover                   | Cover interfaces.  |
| 5   | Interface Cover                | Protect interfaces.  |
| 6   | Ring-Pull Handle for Interface | Turn the ring-pull handle to unlock and lock the cover. After unlocking, pull to open the cover.   |
| 7   | Charging Indicator             | <ul style="list-style-type: none"> <li>● Solid Red: The battery is charging normally.</li> <li>● Solid Green: The battery is fully charged.</li> </ul> |

|    |                              |  |
|----|------------------------------|--|
|    |                              | <ul style="list-style-type: none"> <li>• Red and Green Flash: Battery charging exception.</li> </ul>   |
| 8  | USB Type-C Interface         | Charge the device or export files with USB USB-A to USB-C cable.   |
| 9  | SIM Card Slot                | Reserved.  |
| 10 | Neck Strap Mounting Point    | Mount the neck strap. See <b>3.5.1 Mount Neck Strap</b> for neck strap mounting guide.   |
| 11 | Battery                      | Supply power to the device.  |
| 12 | Ring-Pull Handle for Battery | Turn the ring-pull handle to unlock and lock the battery. Pull the battery out when the battery is unlocked.   |
| 13 | Thermal Imaging Lens         | View the thermal image.  |
| 14 | Charging Contacts            | For charging the camera via the in-truck charger (not included).   |
| 15 | Tripod Mount                 | Mount the tripod.  |
| 16 | Trigger                      | <p>In live view: pull to capture snapshots, or hold to record a video/freeze the image and pull to stop recording.</p> <p>In menu: pull to browse options or reduce value when setting parameters.</p> <p>See <b>1.3.2 Button Operation</b> for detailed instructions.</p> |

### 1.3.2 Button Operation

Button and trigger function are different in live view interface or in menu interface.

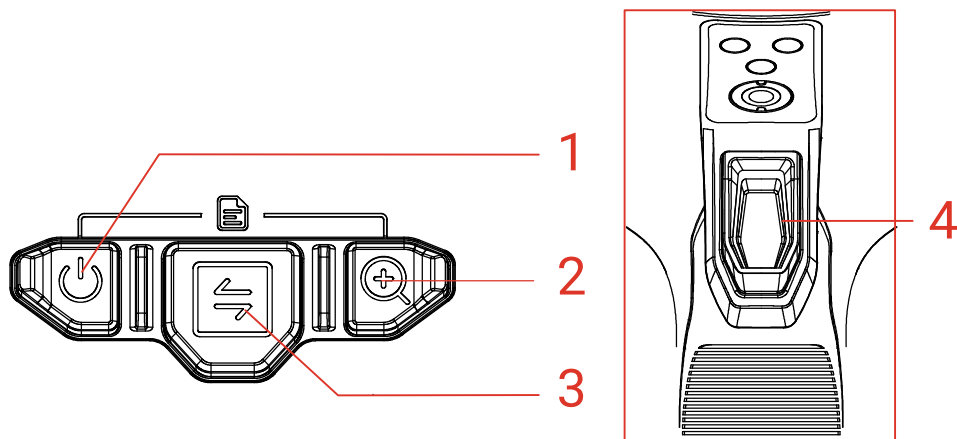






Figure 1-3 Buttons and Trigger










## Live View Interface

Button and trigger functions in live view are shown in the following table.

Table 1-2 Buttons and Trigger Operation in Live View

| Button | Description   |
|--------|---|
| 1      | <p>Power button. See <b>3.2 Power On/Off and Manual Sleep</b> for detailed instructions.</p> <ul style="list-style-type: none"> <li>• Press or hold  to power on the camera. When the camera is on, hold  for over 6 s to power off the camera.</li> <li>• In live view, hold  for less than 3 s to quickly switch to the basic mode.</li> <li>• In live view, hold  for 3 s to 6 s to put the camera into sleep mode.</li> <li>• Reset Button</li> </ul> |
| 2      | <p>Zoom-in button. Press to switch among the 3 zoom-in ratios.</p>  |
| 3      | <p>Mode button. Press to switch among image modes. See <b>3.3.2 Switch Image Mode</b> for the introduction of the image modes.</p>  |
| 4      | <p>Trigger. You can customize the function of holding trigger in live view. See <b>1.3.3 Customize Trigger Function</b> for instructions.</p> <p>In live view:</p> <ul style="list-style-type: none"> <li>• Pull the trigger to capture snapshot, or hold the trigger to start recording a video and pull again to stop recording.</li> <li>• (Optional) If you set the trigger as <b>Hold to freeze image</b>, hold the trigger to freeze the live image, and pull again to resume to live view.</li> </ul> <p>In menu interface: Browse options from bottom to top or <b>reduce value when setting a parameter</b>.</p>   |












| Button | Description  |
|--------|--|
| 1+2    | <p>Enter the menu by the following ways:</p> <p>Photo / Video Storage - Menu</p> <ul style="list-style-type: none"> <li>• Press  and  at the same time, press  again and  at the same time.</li> <li>• And you will enter the photo and video storage, where you can view and also delete the documents. See 3.3.5 Menu/Configuration</li> <li>• Press  and  at the same time, and the password window will open.</li> <li>• You can find the password on the warranty card in the case.</li> <li>• Press  to enter a number forward and  to confirm the number. After you have entered the three-digit password, confirm it by holding  it down for about 3 seconds. After that, you will be in the configuration menu.</li> </ul> |

## Menu Interface

After entering the menu interface, you can operate 3 buttons (power button, zoom-in button, and mode button) according to the function icons on the lower side of the screen. The icons and functions displayed in the screen are shown in the table below.






Table 1-3 Icons in Menu Interface

| Screen Display Icon   | Description                         | Screen Display Icon   | Description            |
|---|-------------------------------------|---|------------------------|
|  | Go back to the live view interface. |  | Back to previous menu. |
|  | Enter album.                        |  | Delete.                |
|  | Enter system menu.                  |  | Cancel.                |
|  | Next.                               |  | Confirm.               |
|  | Enter/Confirm.                      |   |                        |

In addition, when browsing menu or adjusting parameters, **pull trigger to select item from bottom to top or reduce value.**



### 1.3.3 Customize Trigger Function

Follow this procedure to customize the function of holding the trigger in live view. Go to the configuration menu see 1.3.2.

1. In live view, press  and  to enter menu.
2. Press  to enter settings, and press  to select **Trigger Settings**.
3. Press  to set the function in live view.
  - **Record:** Hold the trigger in live view to start recording a video.
  - **Hold to freeze image:** Hold the trigger in live view to freeze the image, and press again to resume live view.

## 2 Quick Use Process

You can follow the steps to quickly use the camera.







1. For the first time using, please fully charge the camera or install a fully-charged battery. See **3.1 Charge the Camera** for charging instructions.
2. Press  to start the camera.
3. Hold and aim the camera to target for temperature measurement or observation.
4. Press  to switch image mode. See **3.3.2 Switch Image Mode** for the introduction of the image modes.
5. Pull the trigger to capture snapshots, or hold the trigger to start recording and pull again to stop recording.
6. View the saved files in the local albums. See **3.3.5 View Files in Albums** for instructions.
7. Export the files for analysis. See **3.3.6 Export Files** for the exporting instructions.

## 3 Basic Operations

### 3.1 Charge the Camera

For the first time using or when the battery is insufficient, please charge the camera or replace a battery.

You can see the battery status by checking the battery icon in the status bar.

| Icon  | Description  |
|---|--|
|    | Charging.  |
|    | Fully charged.   |
|   | 75% of charge.   |
|  | 50% of charge.   |
|  | 25% of charge. If it flashes, please charge your camera, otherwise the camera will automatically shut down soon. |
|  | Battery exception.   |



#### Note

Please charge the camera with the cable and charging base provided by the manufacturer.

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#### 3.1.1 Charge Battery via Charging Base

Use charging base provided by the manufacturer to charge the batteries.

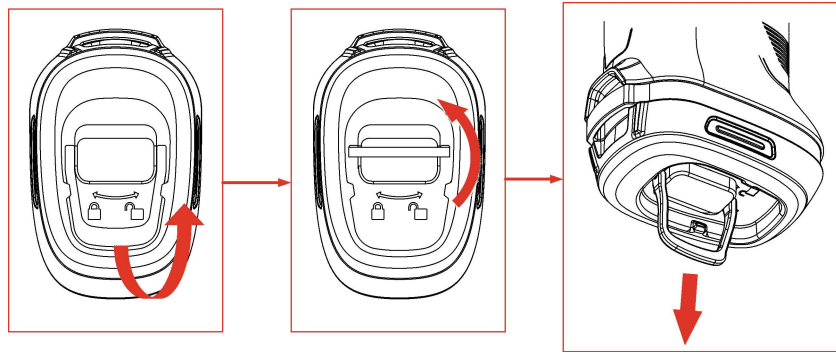


Figure 3-1 Removing Battery

1. Pull out the ring on battery and turn it 90° to unlock the battery.
2. Pull the battery out.
3. Insert the battery to the charging base.
4. Checking the indicator for charging status.



### Note

- Solid Red: Charging normally.
  - Solid Green: Fully charged.
- 

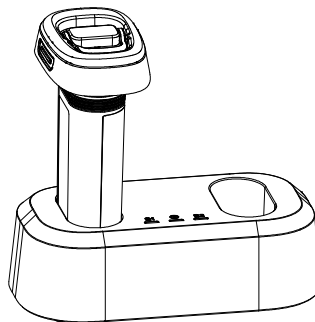


Figure 3-2 Charge Battery

5. When the battery is fully charged, remove it from the base.
6. Align the battery with battery compartment, push it to the end and turn the ring 90° to lock the battery.

### 3.1.2 Charge Camera via USB Cable

The camera can also be charged via the USB Type-C cable.

#### *Before You Start*

Battery should be installed if you charge the device with a USB cable.

1. Open the rubber cover and interface cover on top of the camera to show the USB Type-C interface (②).

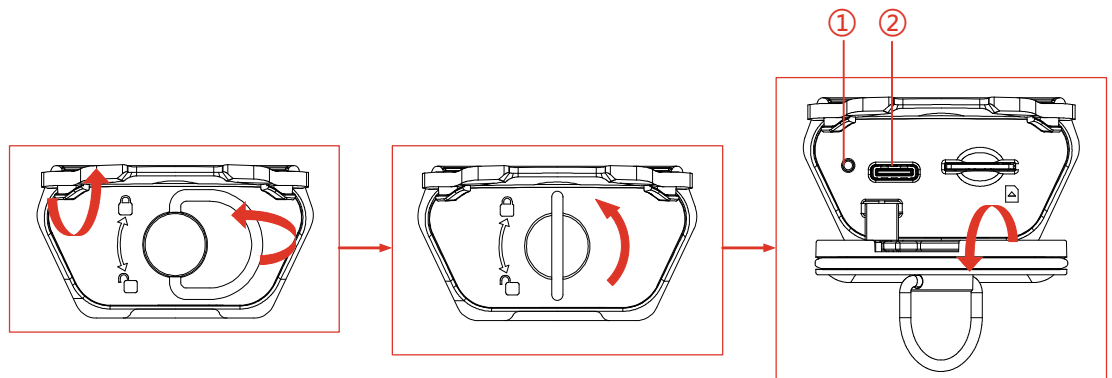


Figure 3-3 Show Type-C Interface

2. Connect the camera to a USB Charger (should be prepared by user) or your PC with the provided USB-A to USB-C cable.
3. Checking the charging status via the indicator (①) near the type-C interface.



### Note

- Solid Red: Charging normally.
  - Solid Green: Fully charged.
  - Flashing Red and Green: Charging exception.
- 

4. When charging completes, disconnect the cable.
5. Lock the interface cover and put the rubber cover in place.

## 3.2 Power On/Off and Manual Sleep






You can power on/off the camera or put the camera into sleep mode by pressing or holding the power button . Follow the pop-up instructions or refer to the table below for detailed instructions.

Table 3-1 Power on/off and Sleep Mode Instructions

| Task       | Operation   | Result   |
|------------|---|--|
| Power on   | Press or hold (subject to your particular camera model)  to power on the camera.   | The camera enters live view interface after starting-up.                     |
| Power off  | Hold  for over 6 seconds to shut down.   | The camera is turned off to conserve battery power.                          |
| Sleep Mode | Hold  for 3 to 6 seconds to enter sleep mode and turn off the screen display. Press  again to wake up the camera. | The camera's screen is off, and the camera is still running and calibrating. |

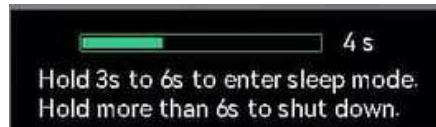


Figure 3-4 Pop-up Instructions

## 3.3 Commonly Used Functions

### 3.3.1 Read Screen Information

The camera screen has live view interface and menu interface serving different purposes.

#### Live View Interface






The live view interface is for user to view thermal image and target temperature. Understanding the icons and figures in advance is helpful for first-time using.



Figure 3-5 Live View Interface







| No. | Description   |
|-----|---|
| 1   | <p>Status Bar. Icons in this bar show device hardware status, including:</p> <ul style="list-style-type: none"> <li>• Battery and charging status. For example,  means fully charged.</li> <li>• Hotspot is enabled, . For hotspot connection, see <a href="#">3.4 Connect to Mobile Application and Software</a> for instructions.</li> <li>• Zooming ratio (2.0X, 4.0X). For the zooming operation, see <a href="#">3.3.3 Zooming in Interested Objects</a>. Display only when zoomed in.</li> <li>• USB cast screen is enabled, . For more screen casting instructions, refer to <a href="#">3.4.2 UVC Cast Screen Tool</a>. Is delete</li> <li>• Object Details Enhancement (ODE) is always on. For more information about ODE, refer to <a href="#">4.1.4 Object Details Enhancement (ODE)</a>.</li> <li>• Compass is on, . The number stands for the calibration level. Numbers smaller than 3 mean that the compass is not properly calibrated and the direction displayed might not be correct. For correcting the magnetic declination, refer to <a href="#">4.3.2 Magnetic Declination Correction</a>.</li> <li>• Low sensitivity mode indicator . It indicates that the camera is currently in a low sensitivity mode like basic, black hot, white hot and fire mode.</li> </ul> <p>High temperature modes: Basic NFPA, black hot, white hot and fire detection modes. Low temperature modes: Rescue, hot area, cold area, and building modes.</p> |



|   |  |
|---|--|
|   | <ul style="list-style-type: none"> <li>TI BASIC PLUS mode indicator . It indicates that the camera is currently in the basic mode.</li> </ul>  |
| 2 | <p>Thermal readout area.</p> <p>There are 3 types of thermal readout style available. Refer to <b>4.1.1 Adjust Thermal Readout</b> for details of the 3 display style and settings.</p>  |
| 3 | <p>Image Mode Bar.</p> <p>Available image modes are listed in this bar. The mode with blue box is the mode currently in use. Mode description and switching operation are explained in <b>3.3.2 Switch Image Mode</b>.</p>   |
| 4 | <p>Live image area.</p> <p> marks the center point of the live scene.  marks the highest temperature point and  the lowest temperature point in the scene. You can turn on/off of the highest and lowest temperature point display. Refer to <b>4.1.3 Display Real-time Hot and Cold Spots</b> for instructions.</p> <p>Temperature display occurs in the lower left area of the screen.</p> <p>Date/Time 4.4.4 You can have it constantly on the screen.</p> <p> Battery and charging status. For example, 'fully charged' means.</p> |

## Menu Interface

Go to the configuration menu see 1.3.2.

In live view interface, press  and  together to enter camera menu to check system information of the camera. Then, press  to select  and enter local albums, or press  to select  and enter system setting menu.

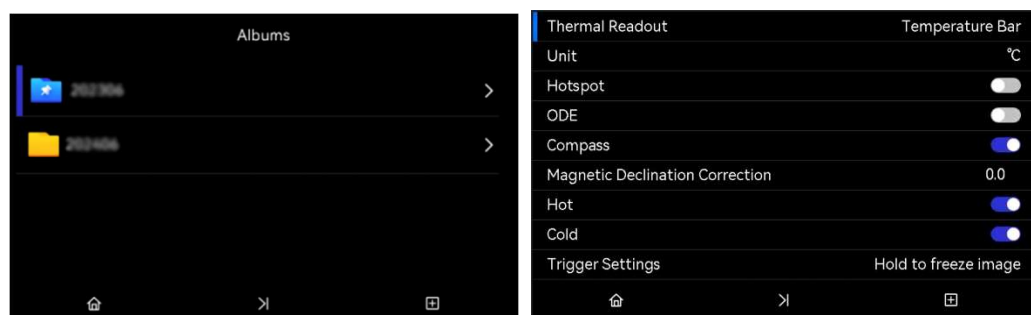



Figure 3-6 Albums and System Settings

- For viewing snapshots and exporting files, refer to **3.3.5 View Files in Albums** and **3.3.6 Export Files**.
- For local album management, refer to **4.2 Album and Files Management**.
- For system settings, refer to **4 More Settings**.

### 3.3.2 Switch Image Mode

In live view, press  to switch image modes. The camera supports multiple modes suitable for different scenes and objects.



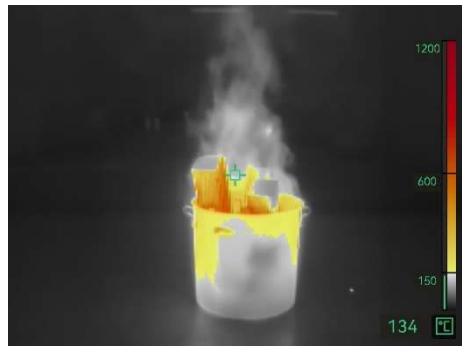







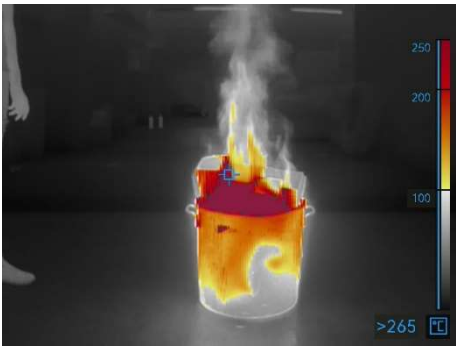



In live view, hold  for less than 3 seconds to quickly switch to the basic mode / Basic Fire Mode – NFPA Mode change.

Table 3-2 Image Modes Description

| Mode  | Mode Description   | Example Snapshot   |
|---|--|--|
|   | <p>Basic mode NPFA MODE<br/>-20 – 650°C</p> <p>It is applicable to firefighting, and life searching and rescue.</p> <p>The real-time temperature is marked with the corresponding colors in the color-temperature scale.</p> |   |
|  | <p>White hot mode.<br/>-20 – 1200°C</p> <p>It is applicable to firefighting and life searching and rescue scenarios.</p> <p>Black and white image.<br/>Temperature of white areas is higher.</p>                             |  |
|  | <p>Black hot mode.<br/>-20 – 1200°C</p> <p>It is applicable to firefighting and life searching and rescue scenarios.</p> <p>Black and white image.<br/>Temperature of darker areas is higher.</p>                            |  |

|   |   |  |
|---|---|--|
|    | <p>Fire detection mode.<br/>-20 – 1200°C<br/>UVA Mode</p> <p>It is applicable to scenes with many open fires and high background temperature.</p> <p>The display effect is similar to the basic mode. Only that the start temperature of red and yellow marking is higher.</p>                          |    |
|    | <p>Rescue mode.</p> <p>The mode is suitable for searching and rescuing people in the field, building, or traffic accident scene.</p> <p>The display effect is similar to the basic mode. Only that the start temperature for red and yellow marking is lower.</p> <p>-20 – 250°C<br/>Only High Gain</p> |   |
|  | <p>Hot area mode.</p> <p>This mode detects high temperature targets of the scene and mark them in red.</p> <p>This mode is applicable to search remaining fire during overhaul after fire is basically out, people in water or field, etc.</p> <p>-20 – 250°C<br/>Only High Gain</p>                    |  |

















### 3.3.3 Zooming in Interested Objects

In live view interface, aim the camera to a target and press  to switch zoom ratio. The camera supports 2 zoom ratios, 2.0X, and 4.0X. You can check current zoom ratio from the status bar.

### 3.3.4 Capture Snapshots and Record Videos

In live view interface, aim the camera to a target, and pull trigger to capture a snapshot, or hold the trigger to start recording a video and pull again to stop (go to **System Settings > Trigger Settings** to set the trigger function as **Record** beforehand). Snapshots and videos are saved in local albums.

### 3.3.5 View Files in Albums

1. Press  in the live view interface to  access the menu interface. Press  and  to access the menu interface.
2. In live view interface, press  and  to enter menu interface.
3. Select  to enter albums.
4. Press  to select an album folder and press  to enter.
5. Press  to browse files and press  to view the details.
6. Press  or pull trigger to view the next or previous file.
7. Optional: Playback recorded video on camera.
  - Hold  to play the video.
  - When playing the video, press  to pause or resume.
  - When playing the video, press  to stop and return to the album.
8. Press  to go back to upper-level menu.


### 3.3.6 Export Files

#### Export files via the mobile application

1. Launch the app and add the camera. Refer to **3.4.1 Mobile Application**.
2. Select **On-Device Files** on the app to access the on-device albums.
3. Select a file, and tap **Download** to save to your local albums.

#### Export files to PC

Connect the camera and PC via the provided USB cable to export snapshots and videos, and view them on PC.

1. Connect the camera to PC with a USB-A to USB-C cable. See the interface in Figure 3-3 for instructions.
2. Press  to select **USB Drive** on the camera. The camera storage appears in the PC as a removable disk.
3. Open the detected disk and enter the album folder.

4. Copy files and paste them to your PC.
5. Disconnect the USB cable and lock the interface cover.











## 3.4 Connect to Mobile Application and Software

### 3.4.1 Mobile Application

You can use the mobile application to view live image, capture snapshots and adjust camera settings, etc.

Download and install the latest version to your mobile device.

The camera supports hotspot for wireless connection.

1. Turn on the camera's hotspot.
  - 1) In live view, press  and  together to enter menu. See 1.3.2
  - 2) Select  to enter system setting menu.
  - 3) Press  to select **Hotspot**, and press  to enter hotspot configuration.
  - 4) Press  to move the box to  and press  to enable hotspot.
  - 5) Press  to move the box to QR Code, and press  to show the code.



Install the THG Start app on your device.

2. Connect the camera to the app.
  - 1) On mobile device, enter the app and tap "+" in the upper right corner.
  - 2) Select "Scan" and aim the camera of your mobile device to the QR Code. Then the client starts to add your thermal camera.
  - 3) You can see camera live image via the app after adding process finishes.



#### Note


For more using guide of the client, please check its embedded user manual from **Settings > Help**.

---

### 3.4.2 UVC Cast Screen Tool

The camera supports casting screen to PC by UVC protocol-based client software or player. Connect the camera to your PC via the included USB cable, and cast the real-time live view of the camera to your PC.

1. Download the UVC protocol-based software.

2. Connect the camera to the PC with a USB cable. Press  to select **USB Cast Screen** on the camera.
3. Open the UVC protocol-based software on your PC.
4. The live image of the camera then displays on your PC.

### 3.5 Mount Neck Strap and Lanyards

The camera is equipped with a neck strap and lanyards for convenient carrying and preventing from accidental falling.

#### 3.5.1 Mount Neck Strap

Install neck strap in the way as shown in the figure below.

1. Fold one end of the neck strap through the neck strap point (③) on one side of the camera, and thread it back through the slide buckle (①) and the fastening collar (②).
2. Repeat step 1 to install the other end of the strap.

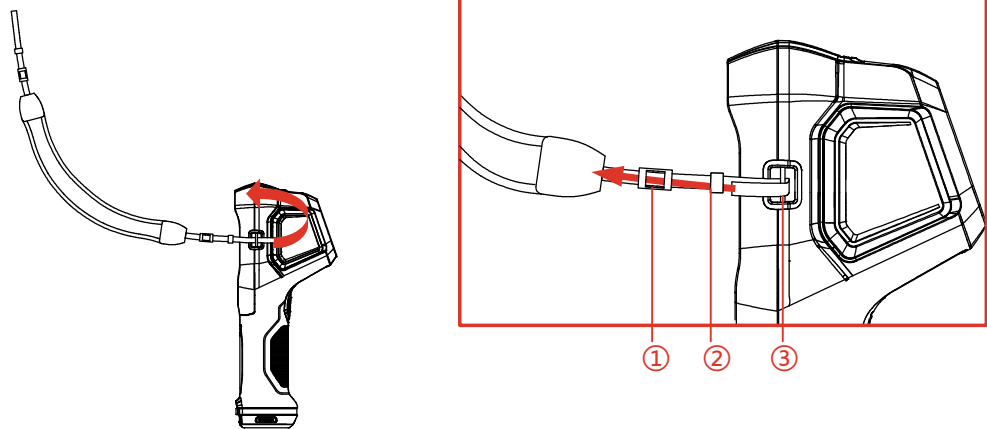


Figure 3-7 Install Neck Strap

#### 3.5.2 Install Lanyards

Install the lanyard (②) to the lanyard hole (①) first, then install the retractable lanyard (③) to the first lanyard.

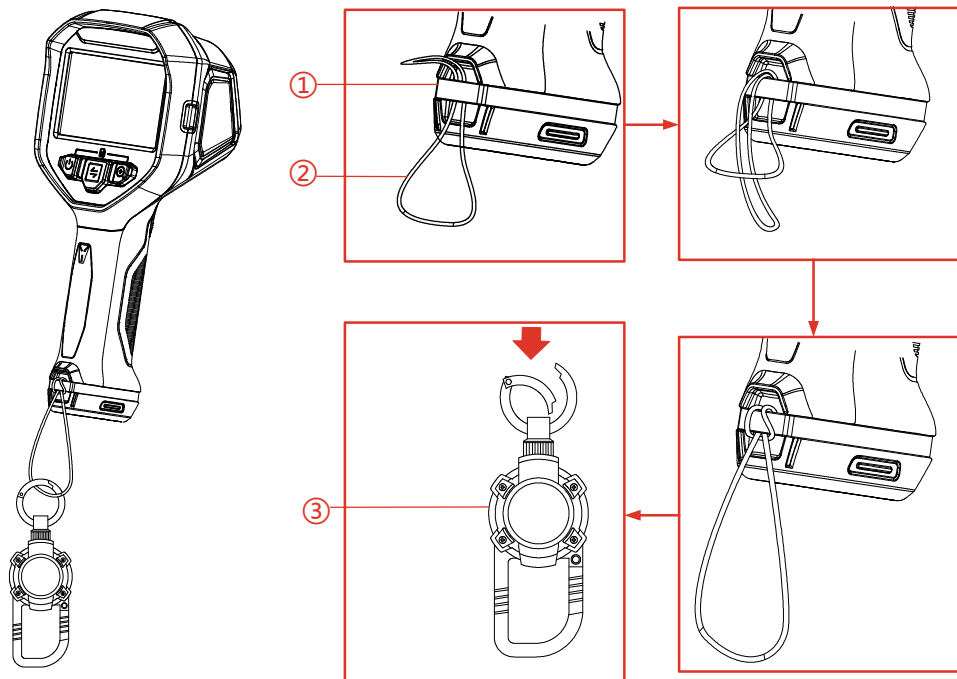


Figure 3-8 Install Lanyards





Attachment of the retraction only to the housing. Not to the battery!

## 4 More Settings

### 4.1 Temperature Measurement Settings

#### 4.1.1 Adjust Thermal Readout

Thermal readout refers to the referential palette color bar, temperature scale and image center temperature that help user to know temperature condition of target scene. There are 3 types of readout available.

1. In live view interface, press  and  together to enter menu. See 1.3.2
2. Select  to enter system menu.
3. Select Thermal Readout, and press  to switch readout style.
  - Temperature Bar ①: Show palette color bar and temperature scale (④), center point temperature bar (⑤), and center point temperature value (⑥).
  - Reference Bar ③: Show palette color bar and temperature scale and center point temperature value.
  - Digital Readout Only ②: Show center point temperature value only.

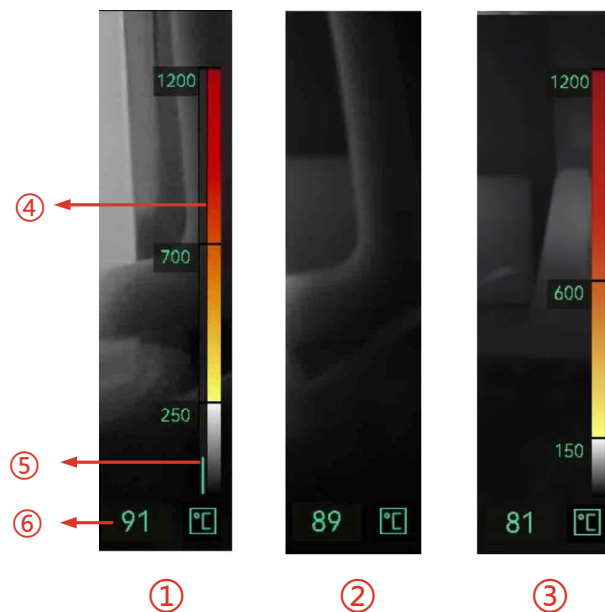


Figure 4-1 Thermal Readout



4. Press  to return to the live view interface.









### Note

Thermal readout of different image modes are different. The figure above is an example for reference.



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## 4.1.2 Change Temperature Unit

The camera supports 3 temperature units: degree Celsius (°C), degree Fahrenheit °F (°F), and Kelvin (K). The temperature unit is displayed in the lower right corner of the live view interface.

1. In live view interface, press  and  together to enter menu. See 1.3.2
2. Select  to enter system setting menu.
3. Press  to select Unit, and press  to switch among the three units.
4. Press  to return to the live view interface.

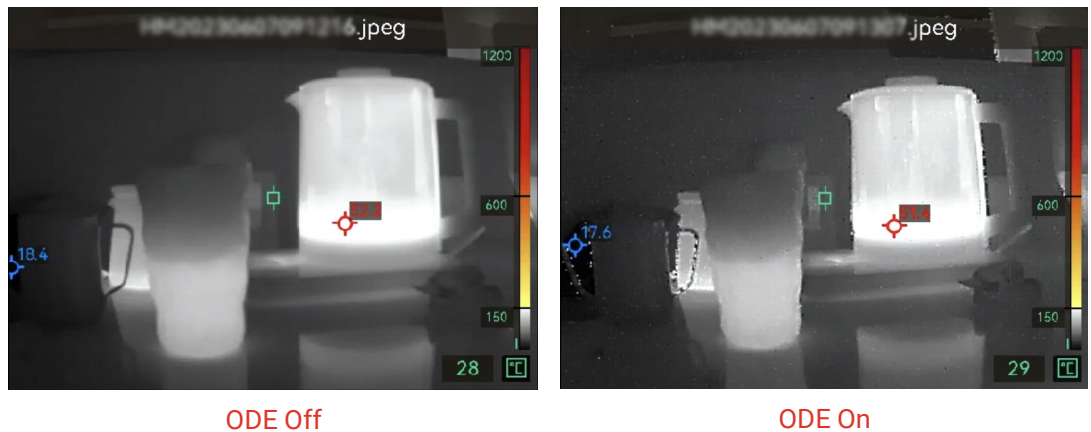
## 4.1.3 Display Real-time Hot and Cold Spots

The camera supports displaying the highest (hot) and lowest temperature (cold) spot in the live view. After enabling the function, the hot spot is marked with  and the cold spot is marked with . Real-time temperatures displayed in the lower left corner of the screen.

1. In live view interface, press  and  together to enter menu. See 1.3.2
2. Select  to enter system setting menu.
3. Press  to select Hot or Cold, and press  to enable the spot.
4. Press  to return to the live view interface.

## 4.1.4 Object Details Enhancement (ODE)

Object Details Enhancement (ODE) is used to enhance outline of certain targets. With this function enabled, target outline will be clearer, but noise of the image will be increased accordingly. The ODE is always ON.




The ODE is always.

## 4.2 Album and Files Management






### 4.2.1 Naming Rule of Album Folder and File

The naming of album folders and files depends on the system date and time. Please set the system date and time correctly before taking snapshots or videos, otherwise you may find it difficult to locate a snapshot or video.

- File name of a file is the saving date and time.
- Files are saved in monthly named album folders according to the saving time. The folder name is 6-digit number of the year and month. For example, "202306" means June, 2023.
- A new snapshot or video is automatically saved in the auto-generated album .















#### Set File Naming Rule

You can customize the naming rule of files.

1. In live view interface, press  and  together to enter menu. See 1.3.2
2. Select  to enter the system menu.
3. Press  to select **File Naming**, and press  to select a naming rule. **Time Stamp** and **Numbering** are selectable.

### 4.2.2 Delete a File

Snapshots and videos saved in local albums can be deleted. Before deleting, make sure that important data is exported for backup. For instructions of exporting, refer to **3.3.6 Export Files**

1. In the live view interface, press  and  simultaneously to access the camera menu.  press  and  together to enter camera menu.
2. Select  to enter camera albums.
3. Press  to select an album, and press  to enter the folder.
4. Press  to select a file, and press  to view the details.
5. Press  to delete.
6. Press  to confirm or  to cancel the deleting.
7. When finished, press  to return to the previous menu.

### 4.3 Direction Display






Equipped with a compass, the camera is able to display its direction on the live image and in the captured images. You can follow the pop-up instructions to calibrate the compass. See **4.3.1 Calibrate Compass** for more information.

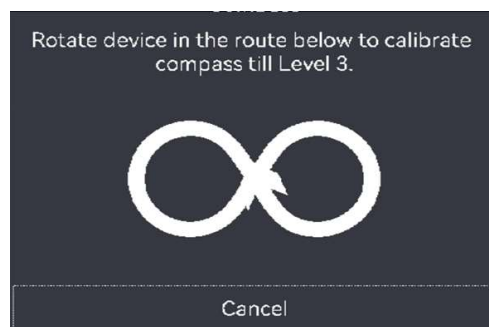
After successful calibration, you can see the direction displayed at lower left corner of the screen. It is recommended to read the direction when you lay the camera horizontally.

To increase the direction accuracy, you can set the magnetic declination correction. See **4.3.2 Magnetic Declination Correction** for instructions.

#### 4.3.1 Calibrate Compass

Compass calibration is a must for correct direction display. You need to calibrate the compass when you enable the function for the first time.

1. In live view interface, press  and  together to enter camera menu. See 1.3.2
2. Select  to enter the system menu.
3. Press  to select Compass, and press  to enable.
4. Follow the screen instructions to move and rotate the camera.






### Note

During calibration, keep moving and rotating the camera to make sure that the camera faces every possible directions

---








5. Stop moving the camera when calibration success message pops up.

### Result

The status bar in the live view interface shows  after successful calibration. If the number in this icon is smaller than 3, it means that the compass is not properly calibrated and the direction displayed might not be correct.

## 4.3.2 Magnetic Declination Correction







Magnetic declination is the angle variation between magnetic north and true north. Adding the magnetic declination to the compass increase the accuracy of direction reading.

1. In live view interface, press  and  together to enter menu.  
See 1.3.2
2. Select  to enter the system menu.
3. Press  to select **Magnetic Declination Correction**, and press .
4. Pull the trigger or press  to configure the magnetic declination.
5. Press  to save and exit.

## 4.4 Date, Time and Language Settings

The system date and time affect the name of snapshots and local album folders. When you power on the camera for the first time, follow the instructions to set the date, time and language.

### 4.4.1 Set Date

1. In live view interface, press  and  together to enter camera menu.  
See 1.3.2
2. Select  to enter the system menu.
3. Press  to select **Date**, and press  to adjust the system date.
4. Press  to switch from setting year, month and date. The parameter in adjustment is displayed with a blue box.

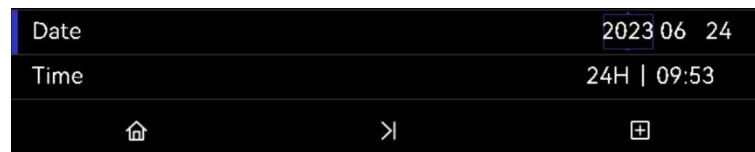


Figure 4-2 Date Settings

5. Press to increase the value, and pull trigger to reduce the value.
6. Press to exit.

## 4.4.2 Set Time

1. In live view interface, press and together to enter camera menu. See 1.3.2
2. Select to enter the system menu.
3. Press to select Time, and press to adjust the system time.








Figure 4-3 Time Settings

4. Press to switch from setting time format, hour and minute. The parameter in adjustment is displayed with a blue box.
5. Press to increase the value, and **pull trigger to reduce the value.**
6. Press to exit.










## 4.4.3 Set Language

1. In live view interface, press and together to enter camera menu. See 1.3.2
2. Select to enter the system menu.
3. Press to select **Language**, and press to select a language.
4. Press to exit.







#### 4.4.4 Date – time in the Display

1. Press  and at the same time  in the live view interface to call up the camera menu. See 1.3.2.
2. Select  to call up the date - time.
3. Press  to select date - time and press to activate the location. Drücken Sie , um Datum - Uhrzeit zu wählen und drücken Sie , um die Stelle zu aktivieren.
4. Press  to return to the live view interface. After activation, the date and time will always be displayed in the upper left corner of the screen.

#### 4.4.5 Set Password

1. Press  and  at the same time in the live view interface to call up the camera menu. See 1.3.2.
2. Select  to open the system settings menu.
3. Press  to select a password and press  to activate the location.
4. Press  to enter a number forward and  to confirm the number. After you have entered the three-digit password, confirm it by holding  down for about 3 seconds. After that, the new password is saved.
5. Press  to return to the live view screen.

#### 4.4.6 Paletten – Manage the Modes

1. Press and at the same time  and  in the live view interface to call up the camera menu. See 1.3.2.
2. Choose  to access the manage palettes.
3. Activate or deactivate the desired palette with the switch .
4. With  this, you confirm the appointment and proceed one position further.
5. They  return to the menu and confirm the setting.


## 5 Maintenance

### 5.1 Upgrade Firmware

#### *Before You Start*

- Please download the upgrade file from the official website or contact the custom service and technical support to get the upgrade file first.
- Make sure that the camera battery is fully charged.



Connect the camera to PC with a USB-A to USB-C cable. See the interface in Figure 3-3.

Press  to select **USB Drive** on the camera. The camera storage appears in the PC as a removable disk.

Copy the upgrade file and paste it to the root directory of the camera.

Disconnect the camera from your PC.






Reboot the camera and then it will upgrade automatically. The upgrading process will be displayed in the main interface.

After upgrading, you can check the version information by pressing  and  together in live view interface.


### 5.2 Save Operation logs

The camera can collect its operation logs and save in the storage only for troubleshooting.

Start or stop saving operation logs.

- 1) In live view interface, press  and  together to enter menu. See 1.3.2
- 2) Select  to enter the system menu.
- 3) Press  to select **Save Logs**, and press  to turn on/off this function.

Export the operation logs to your PC.

- 1) Connect the camera to PC with a USB-A to USB-C cable. See the interface in Figure 3-3.
- 2) Press  to select **USB Drive** on the camera. The camera storage appears in the PC as a removable disk.
- 3) Open the detected disk and enter the log folder.
- 4) Copy the .log files and paste them to your PC.

## 5.3 Restore Camera

Restore the camera to the factory settings. Use this function with caution.

In live view interface, press  and  together to enter menu. See 1.3.2

Select  to enter the system menu.

Press  to select **Restore Device**, and press .

Press  to start restoring and or  to cancel.

**WARNING: AFTER RESETTING, YOUR PASSWORD WILL BE LOST.  
IT WILL NOT BE POSSIBLE TO ACCESS THE SYSTEM MENU  
AFTERWARDS. PLEASE CONTACT SERVICE!**

## 5.4 Model – Firmware – Serial number

Technical data is being displayed.

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