



Handheld Thermography Camera
HIKMICRO B Series
User Manual



Contact Us

Regulatory Information

Read all information and instructions in this document carefully before using the device and keep it for further reference.

For more device information and instructions, please visit our website at www.hikmicrotech.com. You can also refer to other documents (if any) accompanying the device or scan the QR code (if any) on the packaging to get more information.


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About this Manual

The Manual includes instructions for using and managing the Product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version of this Manual at the HIKMICRO website (www.hikmicrotech.com).

Please use this Manual with the guidance and assistance of professionals trained in supporting the Product.

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Note: This product 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 product 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 product 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.

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

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.

EU/UK Compliance Statement



This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the Directive 2014/30/EU (EMCD), Directive 2014/35/EU (LVD), Directive 2011/65/EU (RoHS), Directive 2014/53/EU.



This product and - if applicable - the supplied accessories too are marked with "UKCA" and comply therefore with the following directives: Electromagnetic Compatibility Regulations 2016, Electrical Equipment (Safety) Regulations 2016, the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012.

Frequency Bands and Power (for CE/UKCA)

The frequency bands and transmitting power

(radiated and/or conducted) nominal limits applicable to the following radio equipment are as follows:

Wi-Fi 2.4 GHz (2.4 GHz to 2.4835 GHz): 20 dBm

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

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.



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

According to the Waste Electrical and Electronic Equipment Regulations 2013: Products marked with this symbol cannot be disposed of as unsorted municipal waste in the United Kingdom. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.



Directive 2006/66/EC and its amendment 2013/56/EU (Battery Directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the

European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info.

According to the Batteries and Accumulators (Placing on the Market) Regulations 2008 and the Waste Batteries and Accumulators Regulations 2009: This product contains a battery that cannot be disposed of as unsorted municipal waste in the United Kingdom. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info.

Industry Canada ICES-003 Compliance

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

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radioexempts de licence. L'exploitation est autorisée aux deux conditions suivantes :




- (1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement. equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment.

ce matériel est conforme aux limites de dose d'exposition aux rayonnements, CNR-102 énoncée dans un autre environnement.

Safety Instruction

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

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

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 Power Source (3.7 VDC, 0.5 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 over-heating or fire hazards caused by overload.

Battery

- The built-in battery cannot be dismantled. Please contact the manufacture for repair if necessary.
- 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.
- When the device is powered off and the RTC battery is full, the time settings can be kept for 4 months.
- Before the first use, charge the lithium battery for more than 3 hours.

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 equipment is used in a manner not specified by the manufacturer, the protection provided by the device may be impaired.
- 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.

Calibration Service

We recommend you send the device back for calibration once a year, and please contact the local dealer for the information on maintenance points. For more detailed calibration services, please visit

<https://www.hikmicrotech.com/en/support/calibration-service.html>.

Technical support

<https://www.hikmicrotech.com/en/contact-us.html> portal will help you as a HIKMICRO customer to get the most out of your HIKMICRO products. The portal gives you access to our support team, software and documentation, service contacts, etc.

Using Environment

- Make sure the running environment meets the requirement of the device. The operating temperature shall be -10°C to 50°C (14°F to 122°F), and the operating humidity shall be 95% or less.
- 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.

Emergency

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

Manufacture Address:

Room 313, Unit B, Building 2, 399 Danfeng Road, Xixing Subdistrict, Binjiang District, Hangzhou, Zhejiang 310052, China

Hangzhou Microimage Software Co., Ltd.

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CONTENTS

1	Introduction	1
1.1	Product Introduction.....	1
1.2	Main Function	1
2	Appearance	2
3	Preparation	3
3.1	Charge Device.....	3
3.2	Power On/Off.....	3
3.3	Interface Description.....	3
4	Display Settings.....	4
4.1	Set Image Mode	4
4.2	Set Palettes	5
4.3	Set Level & Span.....	5
4.4	Set Brand Logo	6
5	Temperature Measurement	6
5.1	Set Measurement Parameters	6
5.2	Set Measurement Tool	7
5.3	Enhance High-Temperature Target.....	7
5.4	Set Temperature Alarm	7
6	Capture Snapshots	8
6.1	View Snapshots.....	8
6.2	Export Snapshots	9
7	Connect Device to Wi-Fi.....	9
8	Set Device Hotspot.....	9
9	HIKMICRO Viewer Connection.....	10
9.1	Connect via Wi-Fi	10
9.2	Connect via Hotspot.....	10
10	Set Macro Mode (Optional)	11
11	Cast Screen.....	11
12	Set LED Light	12
13	Maintenance	12
13.1	View Device Information	12
13.2	Set Date and Time	12
13.3	Format Storage Card	12
13.4	Upgrade.....	12
13.5	Restore Device	13
14	Appendix.....	13
14.1	Common Material Emissivity Reference	13
14.2	Frequently Asked Questions (FAQ)	13

1 Introduction

1.1 Product Introduction

The handheld thermography camera is a camera with thermal and optical images. The built-in high-sensitivity IR detector and high-performance sensor detects the temperature change and measure the real-time temperature. It helps the users to find the risky part and lower their property loss. The device supports live viewing, and capturing, etc. It is mainly applied to various industries, such as building, HVAC, and auto industry.

1.2 Main Function

Temperature Measurement

Device detects the real-time temperature, and display it on the screen.

Alarm

Device outputs audible and visual alarm when the target's temperature is higher than the threshold value.

Client Software Connection

- Mobile Phone: You can view live view, capture snapshots, record videos via HIKMICRO Viewer app on your phone. You can also analyze radiometric images, generate and share a report via the app. Scan the QR codes to download the app.



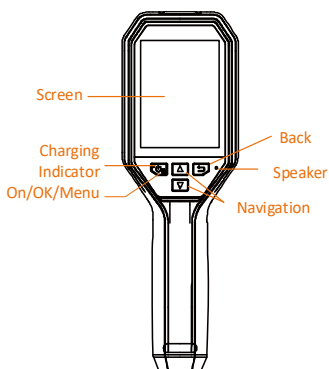
HIKMICRO Viewer
Android



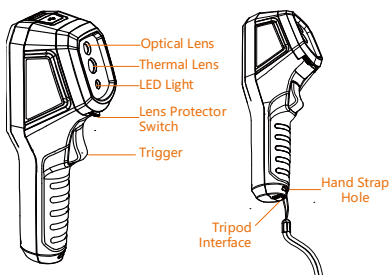
HIKMICRO Viewer
iOS

- PC: You can download HIKMICRO Analyzer (<https://www.hikmicrotech.com/en/industrial-products/hikmicro-analyzer-software.html>) to analyze pictures offline professionally, and generate a custom format report on your PC.

2 Appearance



Button	Function
	Hold: Power on/off Press: Display menu or confirm operation.
	Exit the menu or return to previous menu.
	In menu mode: Press and to select parameters. In live view mode: Press to switch image mode (only supported by certain models), and press to switch palettes.



Component	Function
Charging Indicator	Solid Red: charging. Solid Green: fully charged.
Type-C Interface	Charge the battery or export snapshots.
Trigger	In live view interface, pull the trigger to capture

	snapshots. In menu mode, pull the trigger to switch to live view.
--	--

Note

- The appearance and button functions vary according to different models.
- The optical lens and LED light are only supported by certain models. Please refer to the actual device or datasheet.

3 Preparation

3.1 Charge Device


Steps:

1. Open the top cover of the camera.
2. Connect the device interface and the power adapter with Type-C cable.




3.2 Power On/Off


Power On

Remove the lens cover, and hold  for over three seconds to turn on the device. You can observe the target when the interface of the device is stable.

Power Off

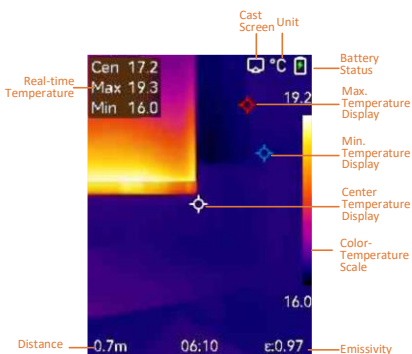
When the device is on, hold  for three seconds to power off the device.

Set Auto Power-off Duration

In the live view interface, press  and go to **Auto Power-off** to set the automatic shutdown time for device as required.

3.3 Interface Description

The interface of different models may vary. Take the actual product for reference.





4 Display Settings

4.1 Set Image Mode

You can set image modes of the device. **Image Mode** is only supported by certain models. Please refer to the actual device or the datasheet.

Steps:

- Select an image mode by the following ways:
 - Go to **Menu** → **Image Settings** → **Image Mode**, and select a preferred image mode.
 - Press  in live view to switch image modes.
 - Thermal**: Display the thermal image only.
 - Fusion**: Fuse the optical image with the thermal image. The fused image with clear edge is displayed in this mode.
 - PIP**: Display a part of the thermal image on the optical image.
 - Visual**: Display the visual image only.
- Optional**: When selecting the fusion mode, you need to select the distance in **Image Settings** → **Parallax Correction** according to the distance to the target, so as to better overlap the thermal and optical images.
- Press  to save and exit.




Note

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.

4.2 Set Palettes

The palettes allow you to select the desired colors.











Steps:

- 1 Select a palette by the following ways:
 - Go to **Menu** → **Palettes**, and press  to switch palettes.
 - Press  in live view to switch palettes.
- 2 Press  to save and exit.

4.3 Set Level & Span

Set a display temperature range and palette only works for targets within the temperature range. You can get better image contrast by adjusting the level & span parameters.






Steps:

- 1 In the live view interface, press  to show the menu.
- 2 Press /, and select **Level & Span**.
- 3 Select **Setting Mode**, and press  to switch auto and manual adjustment.
 - In **Auto** mode, the device adjusts display temperature range automatically.
 - In **Manual** mode, select **Parameters** to enter the setting interface. Press  to lock or unlock the max. temperature or min. temperature, and press / to adjust unlocked value. Or, unlock the max. and min. temperature, and press / to increase or decrease the individual values while remaining the same temperature range.
- 4 Press  to save and exit.

4.4 Set Brand Logo

The brand logo is a manufacturer logo displayed on the upper left corner of the screen.

Steps:

- 1 In the live view interface, press  to show the menu.
- 2 Press  /  to select **Brand Logo**.
- 3 Press  to enable the function.
- 4 Press  to save and exit.

Result

The brand logo is added on the live view interface, captures, and videos.







5 Temperature Measurement

The temperature measurement function provides the real-time temperature of the scene. The temperature information is displayed on the left top of your screen. The function is enabled by default.

5.1 Set Measurement Parameters

You can set temperature measurement parameters to improve the accuracy of temperature measurement.

Steps:









- 1 In the live view interface, press  to show the menu.
- 2 Press  /  to select desired parameters.
- 3 Press  to go to the setting interface.
 - **Emissivity:** Enable **Custom**, and select **Emissivity** to set the emissivity of the target as the effectiveness in emitting energy as thermal radiation by pressing  / . Or you can select a preset emissivity.
 - **Distance:** Set the distance between the target and the device.
 - **Unit:** Set the temperature unit.
 - **Temperature Range:** Select a temperature range or select **Auto Switch**. The device can detect the temperature and switch temperature range automatically in **Auto Switch** mode.

- **Refl. Temp.:** If any object (not the target) of high temperature is in the scene, and the target emissivity is low, set the reflected temperature as the high temperature to correct the temperature effect.

4 Press  to save and exit.

5.2 Set Measurement Tool




Steps:

- 1 In the live view interface, press  to show the menu.
- 2 Press  / , and select **Measurement**.
- 3 Go to **Display Settings**, and select the hot spot, cold spot, center spot, or the user-defined spots that you want to show on live view.
- 4 **Optional:** You can customize the user-defined spots if needed.
 - 1) Go to **Measurement**, select a user-defined spot, and press .
 - 2) Press  /  /  /  to adjust the position of the spot.
 - 3) Press the trigger to finish setting.
- 5 The device shows the real-time temperature on the upper left side of live view interface.

5.3 Enhance High-Temperature Target

In target enhancement function, when the target's temperature is higher than the set value, the target will become red.




Steps:


- 1 In the live view, press  to switch the palette mode to **Above Alarm**.
- 2 Press  and select **Temperature** to configure the enhancement temperature threshold. When the temperature of target is higher than the set value, the target will be red in live view.
- 3 Press  to save and exit.

5.4 Set Temperature Alarm

Set the alarm rules and the device will alarm when the temperature triggers the rule.


Steps:

- 1 In the live view interface, press  to show the menu.
- 2 Press  / , and select **Alarm**.

- 3 Press  to enable the function, and you can enable **Flashing Alarm** or **Audible Warning** as required.
 - **Flashing Alarm:** The LED light flashes when the target temperature exceeds the alarm threshold.
 - **Audible Warning:** The device beeps when target temperature exceeds the alarm threshold.

 **Note**

The LED light will turn off automatically after enabling flashing alarm.

- 4 Select **Measurement** to set the alarm rule. Select **Alarm Threshold** to set the threshold temperature. When the target's temperature is higher or lower than the threshold value, the device will output alarm.
- 5 Press  to save and exit.

6 Capture Snapshots

In the live view interface, pull the trigger to capture snapshot. The live view freezes and device displays the snapshot with temperature information. The snapshot will be automatically saved.












If a visual image is needed to be saved separately, go to **Menu** → **Image settings** to enable **Save Visual Image**.

 **Note**

- You cannot capture snapshots when the device is connected with PC.
- **Save Visual Image** is only supported by certain models.

6.1 View Snapshots

Steps:

- 1 In the live view interface, press  to show the menu.
- 2 Press  /  to select **Image**, and press  to enter the album.
- 3 Press  /  to select the picture, and press  to view it.
- 4 Optional: Press  to delete picture in picture view interface. Press  /  to switch the picture.
- 5 Press  to exit.

6.2 Export Snapshots

Purpose:

Connect the device to your PC with Type-C cable, and then you can export the captured snapshots. You can also export snapshots via HIKMICRO Viewer. See **HIKMICRO Viewer Connection**.

Steps:








- 1 Open the interface cover.
- 2 Connect the camera to your PC with Type-C cable and open the detected disk.
- 3 Select and copy the snapshots to PC and view the files.
- 4 Disconnect the device from your PC.

Note

- For the first connection, the driver will be installed automatically.
- DO NOT disconnect the Type-C cable from PC during drive installation, or it may cause damage to the device.

7 Connect Device to Wi-Fi

Steps:






- 1 In the live view interface, press  to show the menu.
- 2 Press  / , and select **WLAN**.
- 3 Press  to enable the function.
- 4 Press  /  to select Wi-Fi, and enter the password.
- 5 Press  to save and exit.

Note

- DO NOT enter **space**, or the password may be incorrect.
- Wi-Fi function is only supported by certain models. Please refer to the actual device or datasheet.

8 Set Device Hotspot

Steps:

- 1 In the live view interface, press  to show the menu.
- 2 Press  / , and select **Hotspot**.
- 3 Press  to enable the function.
- 4 Set the password.
- 5 Press  to save and exit.

Note

- DO NOT enter **space** when setting the password, or the password may be incorrect.
- Hotspot function is only supported by certain models. Please refer to the actual device or datasheet.

9 HIKMICRO Viewer Connection

The device supports both Wi-Fi connection and WLAN hotspot. Connect the device to HIKMICRO Viewer app, and you can control the device via mobile app.

9.1 Connect via Wi-Fi

Before You Start

Download and install HIKMICRO Viewer on your phone.

Steps:

- 1 Turn on the device hotspot and complete the hotspot settings. See ***Connect Device to Wi-Fi*** for instructions.
- 2 Connect your phone to the Wi-Fi network that the device is in.
- 3 Launch the app and follow the startup wizard to create, and register an account.
- 4 Search and add the device to the mobile client.

Result

You can view the live view, capture snapshots, and record videos via the app.

9.2 Connect via Hotspot

Before You Start

Download and install HIKMICRO Viewer on your phone.

Steps:

- 1 Turn on the device hotspot and complete hotspot settings. See ***Set Device Hotspot*** for instructions.
- 2 Connect your phone to the hotspot of the device.
- 3 Launch the app and follow the startup wizard to create, and register an account.
- 4 Search and add the device to the mobile client.

Result

You can view the live view, capture snapshots, and record videos via the app.





10 Set Macro Mode (Optional)

The macro mode assists the handheld thermography camera to view very small objects. The camera can measure the temperature for the very small objects and locate the temperature exception points.

Before You Start

- Install the macro lens before using this function. Refer to the quick start guide of the macro lens for detailed operation.
- The macro lens is not included in the package. Please purchase it separately. The recommended model is HM-B201-MACRO.

Steps:

- 1 In the live view interface, press  to show the menu.
- 2 Press  /  to select **Macro Mode**.
- 3 Press  to enable the function.

Note

- After enabling the macro mode, only the emissivity can be modified. Parameters such as distance, image mode, parallax correction, and measurement range cannot be modified.
- After disabling this function, the parameters will be restored to the previous set values, and the temperature range will be set to auto switch.





11 Cast Screen

The device supports casting screen to PC by UVC protocol-based client software or player. You can connect the device to your PC via a type-C cable, and cast the real-time live view of the device to your PC.


Before You Start

- Connect the device and PC with supplied Type-C cable.
- Download the software and install the client on your PC.

Steps:

- 1 In the live view interface, press  to show the menu.
- 2 Press  /  to select **USB Cast Screen**.
- 3 Press  to enable the function.
- 4 Open the UVC client software on your PC, and you can view the live view and operation of the device.

12 Set LED Light


In the live view interface, press , and go to **Flashlight** to turn on/off the LED light.

Note


Flashlight function is only supported by certain models. Please refer to the actual device or datasheet.

13 Maintenance

13.1 View Device Information





In the live view interface, press  and select **About** to view the device information.

13.2 Set Date and Time

In the live view interface, press  and select **Time and Date** to set the information.

13.3 Format Storage Card

Steps:

1. In the live view interface, press  to show the menu.
2. Press  /  button to select **Format Storage Card**.
3. Press  and select **OK** to start formatting storage card.

Note

Format storage card before first use of it.

13.4 Upgrade

Before You Start

Download the upgrade package from the official website first.


Steps:

1. Connect the device to your PC with Type-C cable and open the detected disk.
2. Copy the upgrade file and replace it to the root directory of the device.
3. Disconnect the device from your PC.
4. Reboot the device and then it will upgrade automatically. The upgrading process will be displayed in the main interface.

Note

After the upgrading, the device automatically reboot. You can view the current version in **Menu → About**.

13.5 Restore Device

In the live view interface, press  and select **Restore Device** to initialize the device and restore default settings.

14 Appendix

14.1 Common Material Emissivity Reference

Material	Emissivity
Human Skin	0.98
PCB	0.91
Cement Concrete	0.95
Ceramics	0.92
Rubber	0.95
Paint	0.93
Wood	0.85
Asphalt	0.96
Brick	0.95
Sand	0.90
Soil	0.92
Cotton	0.98
Cardboard	0.90
White Paper	0.90
Water	0.96

14.2 Frequently Asked Questions (FAQ)

Q: The charge indicator flashes red.

A: Examine the items below.

1. Examine whether the device is charged with the standard power adapter.
2. Make sure the environment temperature is above 0°C (32°F).

Q: Capturing fails.


A: Examine the items below:

1. Whether the device is connected to your PC and the capture function is unavailable.
2. Whether the storage space is full.
3. Whether the device is low-battery.

Q: The PC cannot identify the camera.

A: Examine whether the device is connected to your PC with standard Type-C cable.

Q: The camera cannot be operated or no responding.

A: Hold  to reboot the camera.

Scan the following QR code for device common FAQ.





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