Handheld Thermography Camera

HIKMICRO E Series

User Manual

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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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Regulatory Information

FCC Information

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.

FCC compliance: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help

FCC Conditions

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.

2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity 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 2001/95/EC(GPSD) and Directive 2011/65/EU(RoHS).

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.

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-003 (B)/NMB-003(B) standards requirements.

Safety Instruction

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

- Input voltage should meet the Limited Power Source (5 VDC, 300 mA) 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.
- Use the power adapter provided by a qualified manufacturer. Refer to the product specification for detailed power requirements.

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.
- Make sure the plug is properly connected to the power socket.
- When the device is powered off and the RTC battery is full, the time settings can be kept for 15 days.
- In the first use, power on the device and charge the RTC battery with the lithium battery for more than 8 hours.
- The standard adapter power supply is 5 V.
- The battery is certified by UL2054.

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.
- We recommend you send the device back for calibration once a year, and please contact the local dealer for the information on maintenance points.
- 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'll hear a "click" as a shutter moves in front of the detector. The self-calibration will be more frequent during start up 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 refer to HIKMICRO official website.

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.
- 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 and outdoor uses, but do not expose it in wet conditions.
- The level of protection is IP 54.
- The pollution degree is 2.

Technical support

- The https://www.hikmicrotech.com 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.

Emergency

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

Laser Light Supplement Warning

Warning: The laser radiation emitted from the device can cause eye injuries, burning of skin or inflammable substances. Prevent eyes from direct laser. Before enabling the Light Supplement function, make sure no human or inflammable substances are in front of the laser lens. The wave length is 650 nm, and the power is less than 1 Mw. The laser meets the IEC60825-1:2014 standard.

Laser maintenance: It is not necessary to maintain the laser regularly. If the laser does not work, the laser assembly needs to be replaced in the factory under warranty. Keep the device power off when replacing laser assembly. Caution-Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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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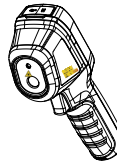
1 Introduction

1.1 Box Content



Handheld Thermography Camera (× 1)

Power Adapter (× 1)

USB Cable (× 1)

Wrist Strap (× 1)

Manual (× 1)

Note: The Handheld Thermography Camera includes one battery and one Micro SD card.

1.2 Product Introduction

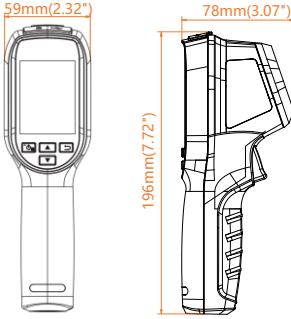
The handheld thermography camera is a camera with thermal images. It can do thermometry, and snapshot capturing. The built-in high-sensitivity IR detector and high-performance sensor detects the temperature change and measure the real-time temperature. The temperature measurement range is -20 °C to 550 °C (-4 °F to 1022 °F) with the accuracy of ± 2 °C (3.6 °F) or ± 2% when the ambient temperature is 15 °C to 35 °C (59 °F to 95 °F) and the object temperature is above 0 °C (32 °F). It helps the users to find the risky part and reduce their property loss.
You can view live view, capture snapshots, record videos via HIKMICRO Viewer App on your phone. You can also analyze pictures offline, generate and share a report via the app. Scan the QR codes on the cover to download the App. You can download HIKMICRO Analyzer (www.hikmicrotech.com) to analyze pictures offline professionally, and generate a custom format report on your PC.

HIKMICRO Viewer Android

HIKMICRO Viewer iOS

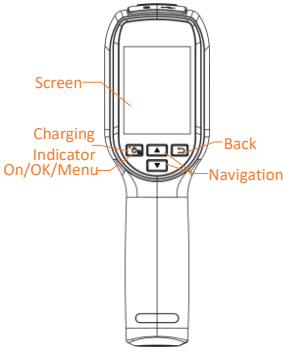
2 Appearance

2.1 Dimensions

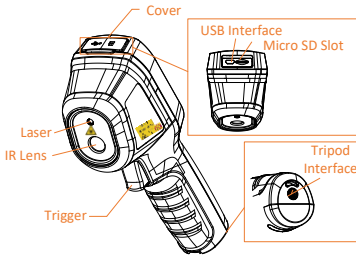


The dimension may vary according to different camera model.

2.2 Interfaces



	Hold: Power On/Off Press: Display menu or confirm operation
	Exit the menu or return to previous menu.
	Navigation Button Press , to select parameters. Press to confirm.



Note:

The warning sign is under the laser and on the left side of the device.

Charging Indicator	When the device is charging, the LED indicator is red. When the device is fully charged, the LED indicator is green.
USB Interface	Charge the battery and export snapshots with the USB cable.
Trigger	Pull the trigger to capture snapshots. When the Laser function is switched on, pull the trigger to turn on/off the laser light.

Warning:

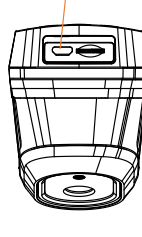
The laser radiation emitted from the device can cause eye injuries, burning of skin or inflammable substances. Prevent eyes from direct laser. Before enabling the Light Supplement function, make sure no human or inflammable substances are in front of the laser lens. The wave length is 650 nm, and the power is less than 1 mW. The laser meets the IEC60825-1:2014 standard.

3 Prepartion

3.1 Charging the Device

Steps:

1. Open the top cover of the camera.
2. Connect the USB interface and the power adapter with USB cable.



Note:

- For the first charge, charge the device for more than 8 hours when the device is turned on.

- The built-in cell battery that powers the real time clock (RTC) of the device may drain during longtime transportation or storage. It is recommended to recharge the RTC battery for the wellfunctioning of the device clock.

- To fully charge the RTC battery, the following requirements should be met:

  a) The rechargeable lithium batteries should be installed on the device.
  b) The device should keep working for more than 8 hours before shutting down.

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

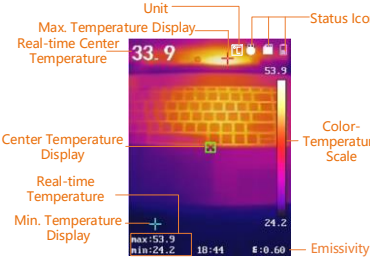
When the device is on, hold for three seconds to power off the device.

Set Auto Power-off Duration

In the live view interface, press and go to **Auto 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 Capture Snapshots

Steps:

1. In the live view interface, pull the trigger to capture snapshot. The live view freezes

and device displays the snapshot with temperature information.

2. Press to save the picture, press to cancel it.

Note:

You cannot capture when the device is connected with PC.

4.1 View Snapshots

Steps:

1. In the live view interface, press to show the menu.
2. Press / to select **Picture**.
3. Press / to select a picture, and press to view it.
4. Press / to switch pictures.
5. (Optional) Press to delete picture.
6. Press to exit.

4.2 Export Snapshots

Purpose:

Connect the device to your PC with USB cable, and then you can export the captured snapshots.

Steps:

1. Open the Interface cover.
2. Connect the camera to your PC with USB 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 time connection, the driver will be installed automatically.

Do not disconnect the USB connection from PC or pull out the Micro SD card during drive installation or it may cause the device damage.

5 Temperature Measurement

5.1 Set Thermography Parameters

Purpose:

The thermometry (temperature measurement) function provides the real-time temperature of the scene and display it on the left of your screen. The thermometry function is turned on by default.

The thermometry parameters affect the accuracy of temperature measurement.

Steps:

1 In the live view interface, press to show the menu bar.

2 Press / to select desired setting bar.

3 Press to go to the setting interface.

- Emissivity: Set the emissivity of your target as the effectiveness in emitting energy as thermal radiation.

  Note: Refer to the 6.1 Common Material Emissivity Reference for emissivity values.

- Meas. Range: Select the temperature measurement range. The device can detect the temperature and switch thermography range automatically in **Auto Switch** mode.

- Distance: Set the distance between the target and the device.

  Note: The recommended thermometry distance is 0.2 m to 2 m with target size 80 × 80 mm.

- Rule: Select **Hot Spot**, **Cold Spot** to show the max. temperature, min. temperature in the live view interface.

- Unit: Set the temperature unit.

4 Press ▲/▼ to select desired parameter, and press ⚙ to enable it.

5 If necessary, press ▲/▼ to increases / decrease the setting values. Hold ▲/▼ to change the value quickly.

6 Press ↩ to save and exit.

5.2 Set Palettes

Steps:

1 In the live view interface, press ⚙ to show the menu bar.

1 Press ▲/▼ to select **Palettes**.

2 Press ⚙ to switch palettes.

3 Press ↩ to save and exit.

6 Set Laser

Steps:

2 In the live view interface, press ⚙ to show the menu bar.

3 Press ▲/▼ to select **Laser**.

4 Press ⚙ to enable the laser light function.

5 Press ↩ to save and exit.

6 In live view interface, pull the trigger to turn on laser light, release the trigger to turn off laser light.

7 Maintenance

7.1 View Device Information

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

7.2 Set Date and Time

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

7.3 Format Memory Card

Before you start:
Confirm the memory card is properly installed before use.

Steps:

1. In the live view interface, press to show the menu bar.
2. Press / to select **Format Card**.
3. Press and select **OK** to start format Card.

Note:

Format memory Card before first use of it.

7.4 Upgrade

Steps:

1. Connect the handheld thermography camera to your PC with USB 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**.

7.5 Restore Device

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

8 Appendix

8.1 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

8.2 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. Plug and unplug the battery once.
3. Make sure the environment temperature is above 0°C (32°F).

Q: Capturing or recording 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 USB cable.

Q: The camera can not be operated or no responding.
A: Hold to reboot the camera.

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