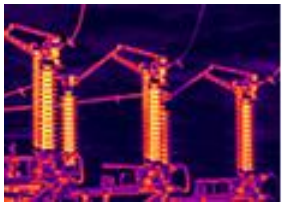
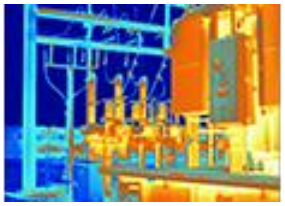
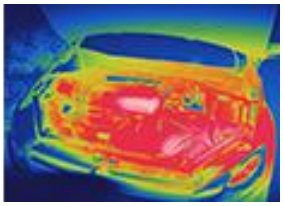
Thermal Camera 384x288 Pixels

T60

Manual



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Registration is free

Statement

Our company is committed to providing customers with high-quality and high-performance infrared thermography products. Our dedicated R&D team and advanced manufacturing technologies ensure that each product meets strict quality standards. Our goal is to meet the needs of different industries in terms of infrared thermography technology through continuous innovation and improvement, providing customers with a superior and more practical user experience. We will also continue to provide comprehensive after-sales service and technical support to ensure that any problems encountered by customers during use are resolved promptly.

Product Declaration

This product is a handheld thermal imaging camera. We ensure that it undergoes rigorous quality testing and calibration before leaving the factory, and that all performance parameters comply with product specifications. The software and applications included in the product are carefully designed and developed to ensure accuracy and stability.

When using this product, be sure to carefully read and follow the operating instructions and precautions in the user manual. Because our company cannot control your specific operating environment and methods, we are not responsible for any damage or loss of data caused by misuse or unauthorized modification.

Table of Contents

1 Product Introduction

This thermal imaging camera is a new generation of professional temperature measurement devices, with a resolution of 384*288 pixels and a resolution of 384*288 pixels. By combining visible light and thermography, it is able to realize a wide range of applications.

Currently widely used in

- **Energy sector:** inspection of the thermal state of transmission lines and electrical equipment and fault diagnosis.
- **Electrical and mechanical industry:** overheating and fault diagnosis of electrical and mechanical equipment.
- **Construction industry:** Detection of moisture, air leaks and insulation defects.
- **Petrochemical industry:** Inspection of the condition of oil pipelines, detection of the interface of materials, detection of heat loss and insulation structure, inspection of the condition of electrical equipment, etc.
- **Firefighting:** Forest fire prevention and detection of potential fire sources, detection of the prevention of spontaneous combustion of special materials, detection of electrical fire safety.
- **Medicine:** Human body surface temperature detection and thermal field distribution analysis.
- Other R&D sectors, automation sector, preventive maintenance, etc.

2 Features

Image

- Thanks to the infrared detector with 384×288 resolution and 8-megapixel visible light, the image is sharper.
- By adopting the unique TisoView image technology, you can achieve super resolution, DDE enhancement, image saturation adjustment, gain adjustment, and other algorithms to make the image sharper.
- HDMI and USB can transmit images of portable instruments

Structural aspects

- The high-sensitivity capacitive touch screen is overlaid with 1.1mm explosion-proof glass, which can protect the display from breakage while ensuring touch sensitivity.
- Built-in 32GB + expandable SD card allows you to store data unlimitedly. For example, when full-frame temperature data logging is required, the SD card can be expanded to store large amounts of data.
- It can be equipped with multiple removable batteries, and the battery capacity reaches 5000mAh, with a battery life of about 5 hours, which can meet the needs of long-term work.
- The laser distance measurement module with standard configuration can support accurate distance detection within 40 meters.

Temperature measurement:

- Unique laser spot temperature measurement mode, which can support laser spot temperature measurement
- Maximum temperature measurement is up to 1200 ℃ and achieves industrial-grade high-precision standards

Software:

- It supports different image recording modes, such as taking photos, recording videos, and taking screenshots.
- Download the Thermal Tools Software from the www.uniks.it website (Products/Thermal Cameras...)

3 Specifications

Parameter		Specification
Thermal Camera	IR resolution	384*288 pixels
	Spectral range	8~14um
	Frame rate	50 Hz
	NETD	<40mK at 25 ℃
	Field of view	17.46 °× 13.14 °
	Lens	15 mm (standard), 19 mm (optional) , 25 mm (optional)
	Temperature measuring range	-20°C~1200°C
	Measurement accuracy	±2°C or ±2% of reading, whichever is greater
	Temperature measurement	Supports maximum, minimum, center point temperature measurement of the entire screen, as well as point, line, and frame temperature measurement
	Color palette	Iron red, rainbow, high contrast rainbow, warm white, hot black, arctic, lava
Visible light	Resolution	8 Mega pixels
	Field of view	P=73° A=66° V=40°
Viewing images	Screen size	4.3-inch touch screen
	Picture Mode	Thermal images, visible light, edge blending, overlay blending, picture-in-picture
	Image Optimization	TisoView image enhancement set
General	Language	It supports English, French, German, Spanish, Portuguese, Russian, Arabic, Japanese, Korean, Simplified and Traditional Chinese.
	Digital zoom	Continuous zoom
	Measurement correction	Target Distance, Ambient Temperature, Relative Humidity, Reflected Temperature
	Wifi	Supports smartphone connection via WiFi network and uses the UNIKS THERMAL APP for image management
	Bluetooth	Support
	I interface	USB Type-C, HDMI
	PC Analysis Software	Support
	Mobile APP	UNIKS THERMAL (Android)
	Laser pointer	Support

	Laser rangefinder	40 meters
	Guided	Support
	Buzzer	Support
	Battery	Removable 5000mAh lithium battery
	Operating time	A fully charged battery can be used for about 5 hours
Storage	Capacity	Built-in 32G EMMC memory, expandable up to 256G via SD card
Documentation	Photography	Support
	S Screen	Support
	Video	Support
Physical properties	Working Temperature	-10°C ~ +60°C
	Storage temperature	-40°C~+85°C

Note: The lens is installed according to the requirements before leaving the factory. The lens cannot be replaced during use after leaving the factory.

4 Thermal Camera Component Introduction


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NO.	Part Name	illustrate
(1)	Multiplex Menu/ok button	● Short press on the main interface to enter the top-level menu; ● In the first-level menu, short press to enter the second-level menu; ● Select the corresponding option in the settings interface and short press to save the settings;
(2)	Customizable buttons	● In the settings interface, you can select the corresponding function to achieve fast operation
(3)	Power/Return Button	● In the off state, long press to turn on the device; ● Long press in power-on state to turn off the device; ● Short press Enter on the menu interface;
(4)	Calibration button	● Short press on the main interface to calibrate
(5)	Arrow button	Up and down arrow button ● On the main interface, short press to switch the picture mode; ● In the menu setting interface, short press up and down to move the selection; Left and right arrow button ● Short press on the main interface to change the color palette; ● In the menu setting interface, short press left or right to move the selection;
(6)	LED	● Switch on or off via the menu function
(7)	Lens	● Original detector lens
(8)	Laser range	● Open or close via the menu function up to 40m

(9)	Camera	● 8-megapixel visible light camera
(10)	LED	● Standard version: Switch the LED on or off via the menu function
(11)	Manual focus	● During use, you can adjust the manual focus by rotating the lens.
(12)	Wrist strap interface	● Attach the wrist strap for easy carrying
(13)	Trigger	● In the main interface, short press the shutter button to take a photo. After taking the photo, short press the OK button to save it, or short press the Back button to cancel the save. ● On the main screen, press and hold the activation button for 3 seconds until the recording time appears in the upper left corner of the screen, indicating that recording has started. Short press the activation button to stop recording;
(14)	Removable battery	● Battery replacement available ● The battery is rechargeable via USB Type-C
(15)	MICRO SD card	● Insert a MICRO SD card to increase the additional storage space.
(16)	Type C	● Through this interface, users can connect to a PC to perform operations, including exporting, deleting, and formatting images. ● Rechargeable via USB Type-C
(17)	HDMI	● Can transmit images by connecting the HDMI cable
(18)	Lens cap	● Protect the lens

5 Quick operating instructions

① When using the thermal imaging camera for the first time, insert the battery into the battery compartment of the thermal imaging camera.

② Press and hold the Power/Return button for 1 second to turn on the device and press and hold it for 3 seconds to turn it off.

③ Look at the temperature on the screen and start using the thermal imaging camera.

④ If the image is not sharp, you can manually adjust the focus using the lens knob without covering it with your hand.

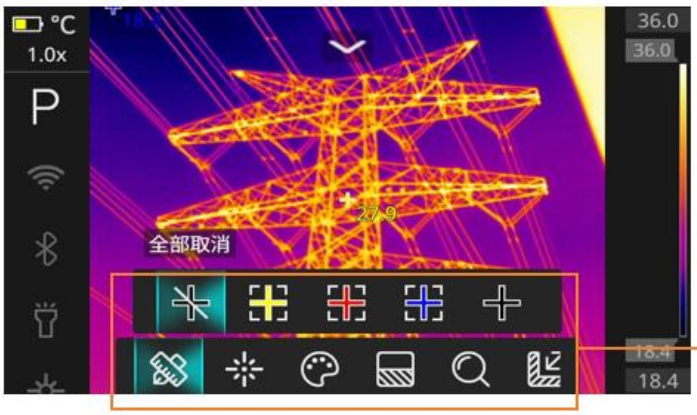
⑤ The camera configuration can also be changed via the system menu.

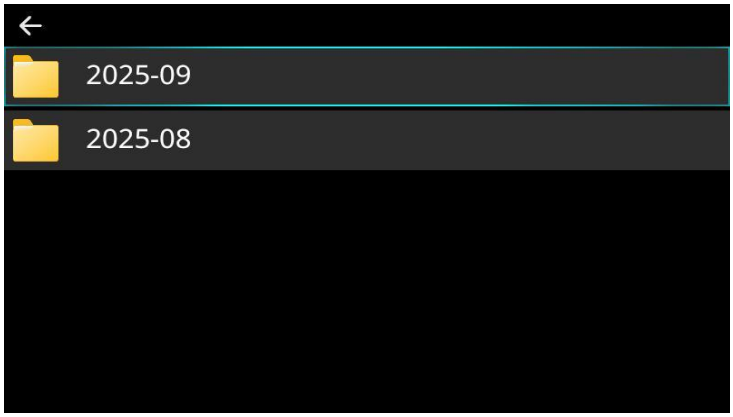
⑥ Short press the trigger button to take a photo, and long press the trigger button for 3 seconds until the recording time is displayed at the top of the screen to record a video.

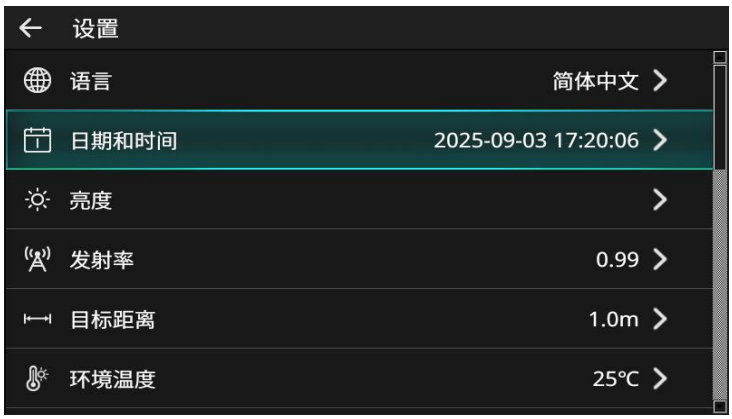
⑦ The photos or videos you have taken can be imported to your computer via USB Type-C.

⑧ When the device is almost empty, you can charge it directly via the USB Type-C port, or you can remove the battery and charge it using a USB Type-C charger.

6 Instructions for using the buttons and touch screen







The device can be operated via buttons and touch screen. The buttons give you access to the

first and second level menus, albums and settings. The touch screen can also be used to manage all functions.

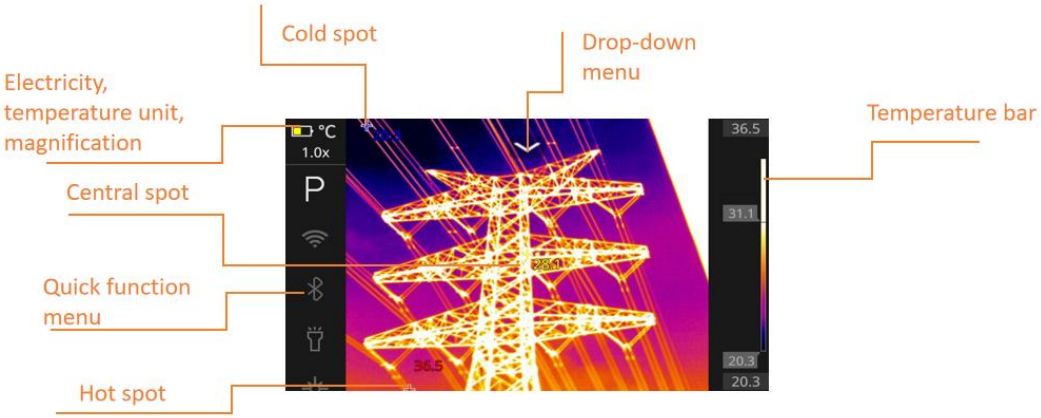
7 Detailed Feature Introduction

7.1 Button Description

NO.	Button name	Functional description
1	Multiplex power and return button	● In the off state, press and hold for 1 second to turn on the device; ● In the power-on state, press and hold for 3 seconds to turn off the device; ● Short press Enter on the menu interface;
2	Confirmation, menu multiplexing button	● Short press on the main interface to enter the top-level menu; ● In the first-level menu, short press to enter the second-level menu; ● Select the corresponding option in the settings interface and short press to save the settings;
3	Calibration button	● Short press on the main interface to calibrate;
4	Up and down arrow button	● On the main interface, short press to switch the measurement mode; ● In the menu setting interface, short press up and down to move the selection;
5	Left and right arrow button	● Short press on the main interface to change the color palette; ● In the menu setting interface, short press left or right to move the selection;
6	Customizable button	● In the settings interface, you can select the corresponding function to achieve fast

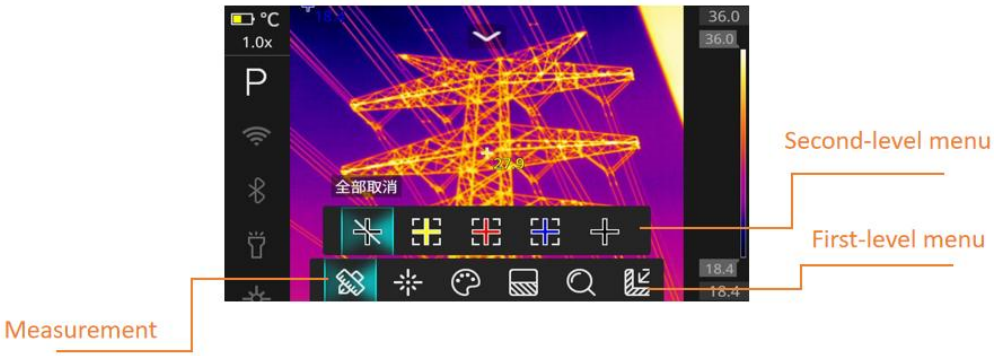
		operation
7	Trigger	• In the main interface, short press the shutter button to take a photo. After taking the photo, short press the OK button to save it, or short press the Back button to cancel the save. • On the main screen, press and hold the activation button for 3 seconds until the recording time appears in the upper left corner of the screen, indicating that recording has started. Short press the activation button to stop recording;

7.2 Main Interface



7.2.1 Measurement

On the main interface, short press the menu button or tap the screen to bring up the menu. Select the measurement function in the top-level menu. The measurement feature includes the following:



NO.	Function	Functional description
1	Cancel all	Cancel out the center point, highest temperature, lowest temperature, drawing point, drawing line, and screen drawing frame
2	Center Point	Toggle the temperature of the center point of the image
3	Maximum temperature	Turn the maximum temperature on or off
4	Minimum temperature	Turn the minimum temperature on or off
5	Point	Draw dots on the screen by tapping it
6	Lines	Draw lines on the screen by tapping it
7	Rectangle	Use the touch screen to draw a rectangle on the screen

7.2.2 Laser

Select Laser from the main menu. The laser function includes the following:

NO.	Function	Functional description
1	Laser pointer	The laser pointer function can be activated
2	Point Temperature Gun Mode	Activates gun mode for point temperature measurement and displays the laser pointer point temperature in the lower right corner of the screen
3	Distance measurement	Activates laser distance measurement and displays the distance of the measured object in the lower right corner of the right screen

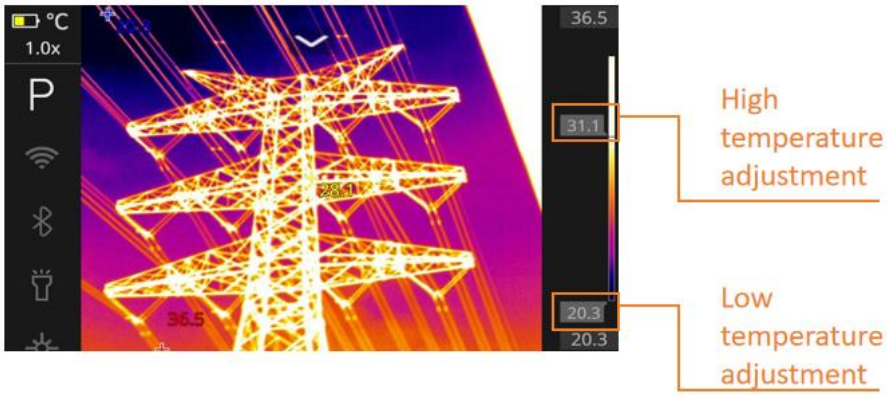
7.2.3 Color palette

If you select the color palette function in the top-level menu, the color palette will contain the following contents:

NO.	Function	Functional Description
1	Iron red	In high-temperature areas, red represents a higher percentage, which is suitable for detecting scenes where high-temperature areas account for a high percentage.
2	Rainbow	The highest temperature is indicated by red, the average temperature by yellow, and the lowest temperature is mainly blue and black, which is suitable for scenes with distinctive colors at low temperature.
3	High contrast rainbow	Rich colors increase the contrast of the image, and even small temperature differences can be accurately identified, making it suitable for use in scenes with small temperature differences
4	Warm white	In high-temperature areas, the color red is more present, which is suitable for detecting scenes where high-temperature areas are more present.
5	Warm Black	In the high temperature range, black is used, and the entire screen is mainly a transition between black and white, which is suitable for users of the

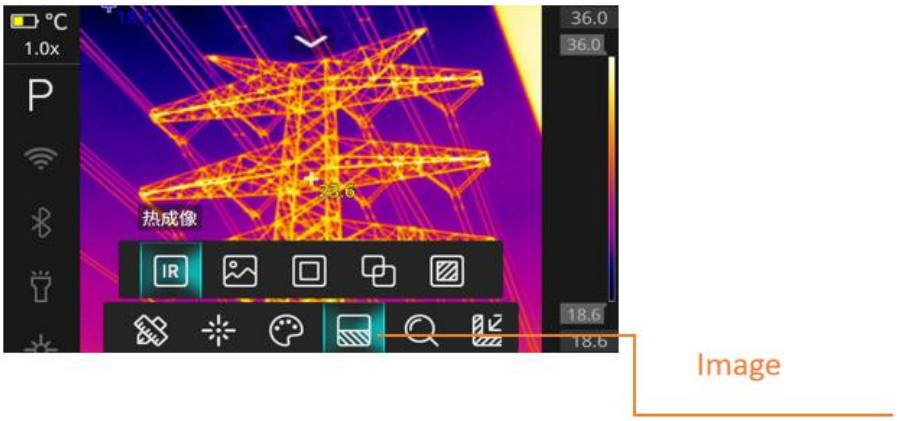
		traditional black and white mode.
6	Arctic	The Arctic palette combines the simplicity of the Iron Red palette with the low-contrast performance of the Rainbow High Contrast palette, using gold to identify hot objects and blue to identify cooler ones. The different colors quickly detect heat sources, while the darker shades allow you to distinguish slight variations in temperature.
7	Lava	Similar to Iron and Arctic, the Lava palette displays warmer objects in warm tones and cooler ones in blue, making it another good choice for quickly capturing body heat and other details in low-contrast environments.

You can manually drag the colored bar on the right side of the screen to adjust the temperature amplitude and observe the temperature area you want to focus on.



7.2.4 Picture Mode

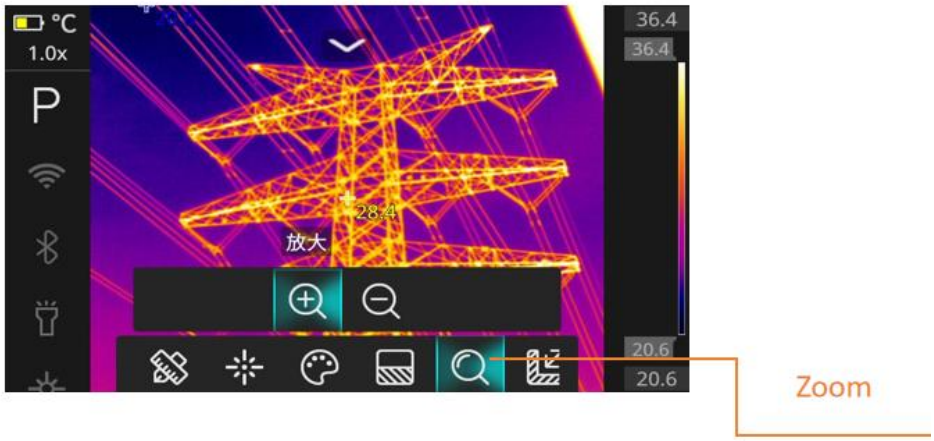
Select the image function in the top-level menu. The image feature includes the following:



NO.	Function	Functional description
1	Thermal imaging	Single infrared thermal imaging, full-frame temperature measurement, the temperature of each point on the screen can be tested
2	Visible light	High-definition image display, clear at a glance
3	Edge B Loan	Not only can you see the infrared image distribution and temperature measurement, but you can also view the visible light details at the same time
4	Overlapping Blending	Part of the visible light color can be superimposed on the infrared thermal image to make the background lighter and make it easier to identify the environment
5	Picture-in - picture	The measurement of the temperature of the central part should be highlighted in particular. Suitable for quickly switching between visible light and infrared images to pinpoint problem spots.

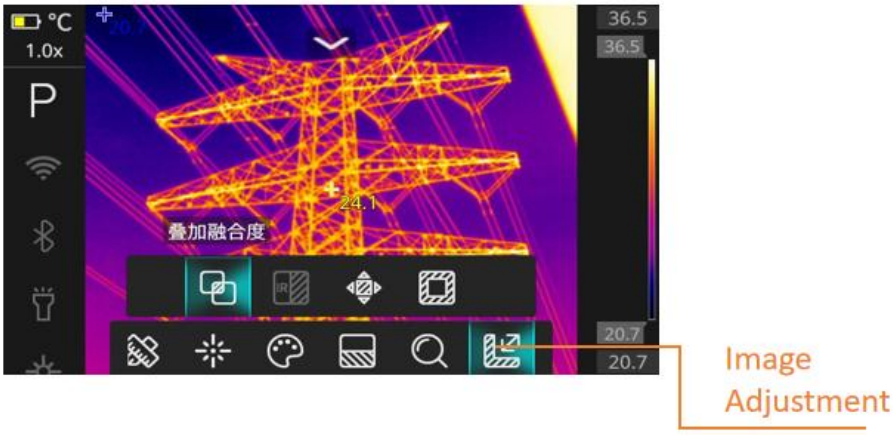
7.2.5 Zoom

Select the zoom function in the top-level menu and zoom in and out by clicking on the zoom function. The zoom functions are 1X, 2X, and 4X. You can also use gestures to zoom in and out by tapping the screen. The gesture zoom range is 1 to 4 times, in 0.1X increments.



7.2.6 Image Adjustment

Select the image adjustment function in the top-level menu. The image adjustment feature includes the following:

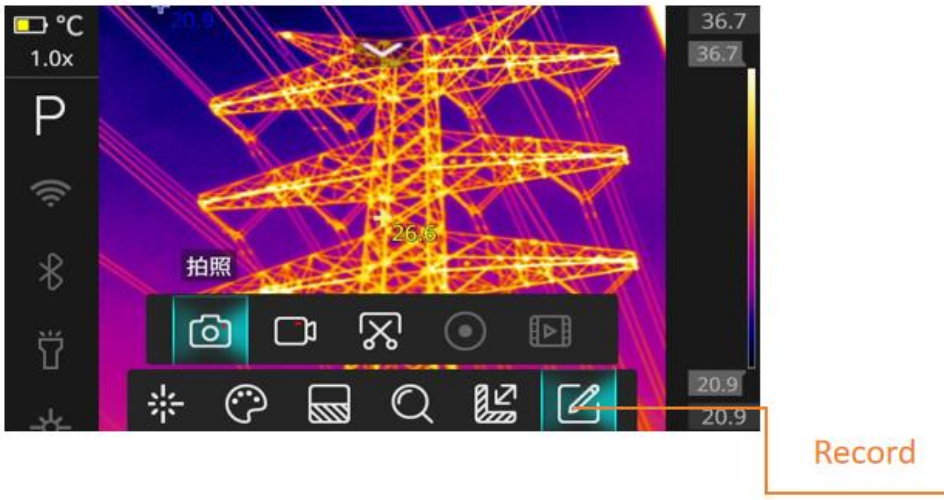


NO.	Function	Functional description
1	Overlay Blending	Infrared and visible images are merged, 0% is a single visible image, 100% is a single infrared image, which can be adjusted in adjusting the degree of blending
2	Infrared contrast (future	Adjust the saturation of infrared images

	update)	
3	Fusion bias	The fusion images of visible and infrared light are not superimposed, which can be adjusted by fusion deviation
4	Edge Melting Force	The fusion of infrared and visible light is the adjustment of the intensity of the lines of the edges of the image

7.2.7 Documentation

Select the recording function in the top-level menu. The recording feature includes the following:

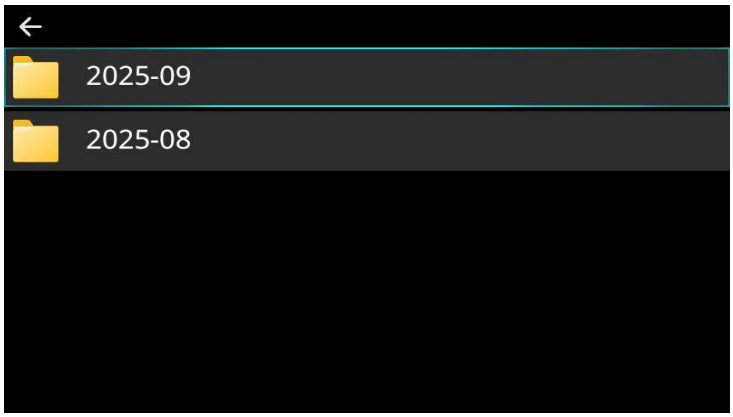


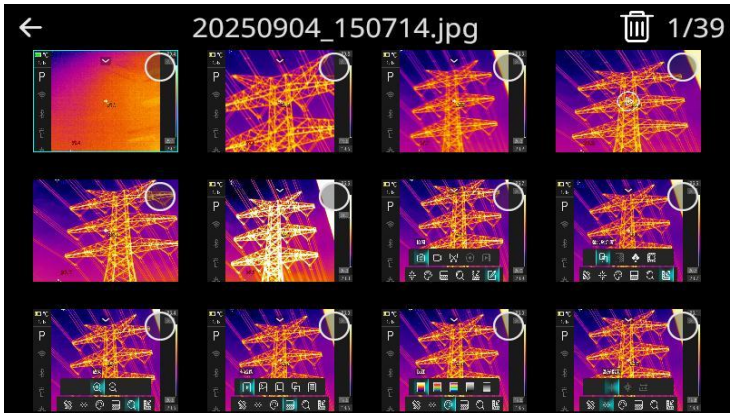
NO.	Function	Functional description
1	Photography	Take photos with temperature data
2	Video	Video recording without temperature data
3	S Screen	Capture the current screen
4	Screen recording (future update)	Record the current screen

5	Radiation flux files (future update)	Record video files with temperature data in dyv format
6	Photo Interval (future update)	You can set the shooting interval and the shooting timer

7.3 Photo Album

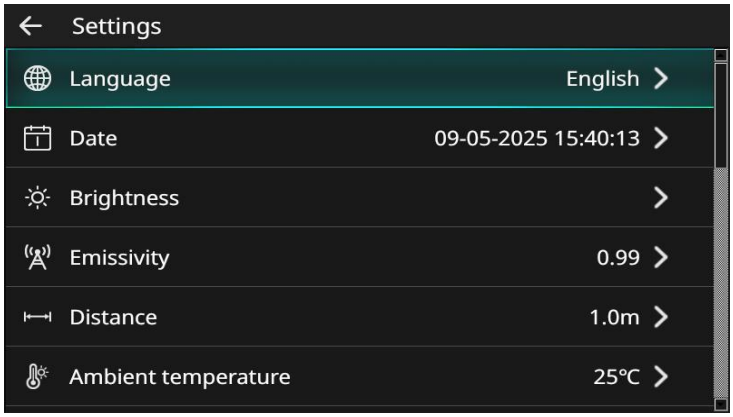
Select the Albums feature in the top-level menu to access the gallery. The interface is as follows:





7.4 Placement

Select the settings function in the top-level menu to access the settings interface:



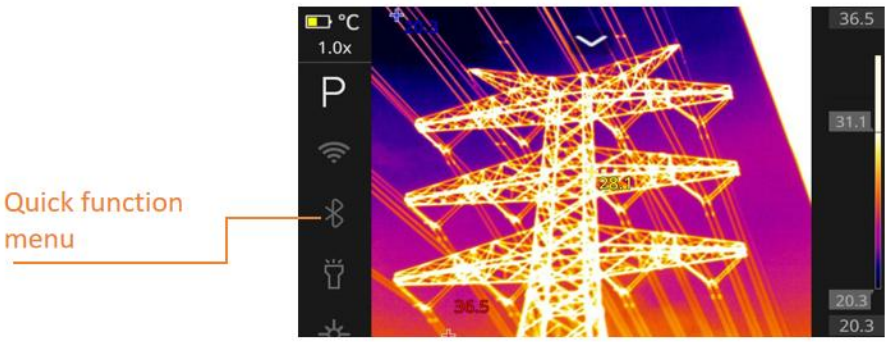
NO.	Function	illustrate

1	Language	It supports English, French, German, Spanish, Portuguese, Russian, Arabic, Japanese, Korean, Simplified and Traditional Chinese.
2	Date and time	Set date and time
3	Brightness	Adjustable brightness
4	Emissivity	Matte: 0.95 Semi-opaque: 0.80 Semi-mirror: 0.60 Specular: 0.30 Costume
5	Target Distance	Distance compensation from 0.5 m to 20 m
6	Ambient temperature	Setting the room temperature compensation
7	relative humidity	Setting Ambient Humidity Compensation
8	Reflected temperature	Setting the Reflected Temperature Compensation
9	Temperature unit	Celsius, Fahrenheit, Kelvin optional
10	Distance Units	Optional meters and feet
11	Temperature alarm	Design Temperature Alarm Threshold
12	Temperature range	-20 ℃ ~1200 ℃
13	Customizable buttons	None, enter the gallery, change the sequential display mode, change the magnification, change the last two color palettes used, change the temperature equipment, screenshots, screen recording, distance

		measurement, point temperature gun mode, laser indicator switch, LED switch, Wi-Fi switch, Bluetooth switch, all alarm switches are optional
14	Temperature display	Follow and optional centralized display
15	Auto Power Off	5 minutes, 10 minutes, 30 minutes, 60 minutes, never
16	Storage	Check storage status and format
17	Reset System Parameters	Reset emissivity, target distance, ambient temperature, relative humidity, reflected temperature, temperature unit, distance unit, temperature alarm, temperature range, temperature display, auto power off, brightness, and measurement to initial state.
18	Check for updates	Upgrade Program
19	Info	SN Number, Device Model, Software Version, Firmware Version

7.5 Quick Function Menu

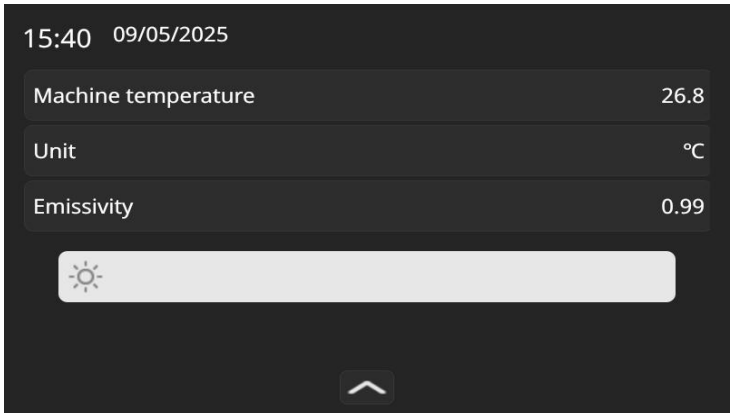
The left side of the screen is the context menu. The icons in the context menu are gray when the feature is not enabled and white when the feature is enabled. The context menu includes the following functions:



NO.	Function	illustrate
1	P	P is the custom button function selection; You can choose the custom button function
2	Wifi	You can turn Wi-Fi on or off, change the password, and view the status of Wi-Fi parameters
3	Bluetooth	You can turn Bluetooth on or off, view the Bluetooth name of the device, connectable devices, pair, the name of the connected devices, unpair, etc.
4	Lighting	Turn the light on or off
5	Point Temperature Gun Mode	Turn heat gun mode on or off
6	Distance measurement	Enable or disable laser distance measurement

7.6 Drop-down menu

Click the drop-down menu icon in the main interface to open the drop-down menu, which contains the following contents:



- Date and time
- Body temperature
- Temperature unit
- Emissivity
- Adjust the brightness

7.7 APP for Android systems

Download the UNIKS THERMAL APP compatible only for Android systems.

8 Analysis software

8.1 Overview

Thermal Tools is a professional computer-based data analysis software capable of performing secondary analysis and processing on images acquired by specific infrared equipment. Download the Software from the www.uniks.it website

8 . 2 Feature

- The software interface is easy to understand and use;
- The temperature can be displayed anywhere on the entire screen;
- Multiple image modes can be switched;
- Processed images can generate corresponding reports;
- Available to integrate other related software or hardware cameras;

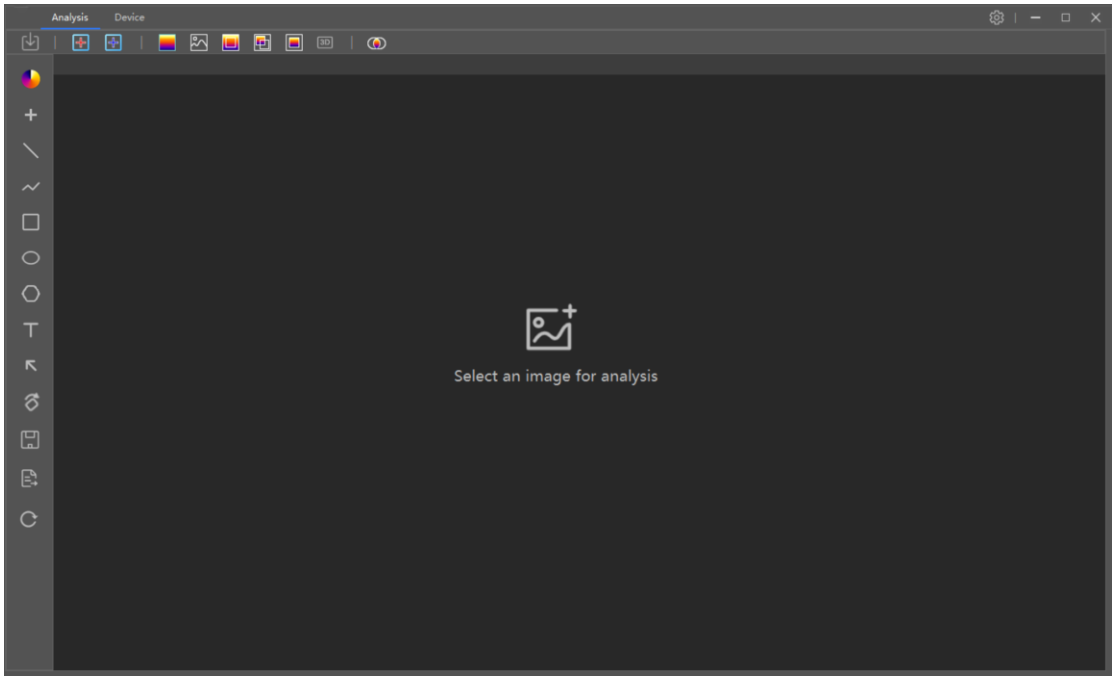
8 . 3 Details

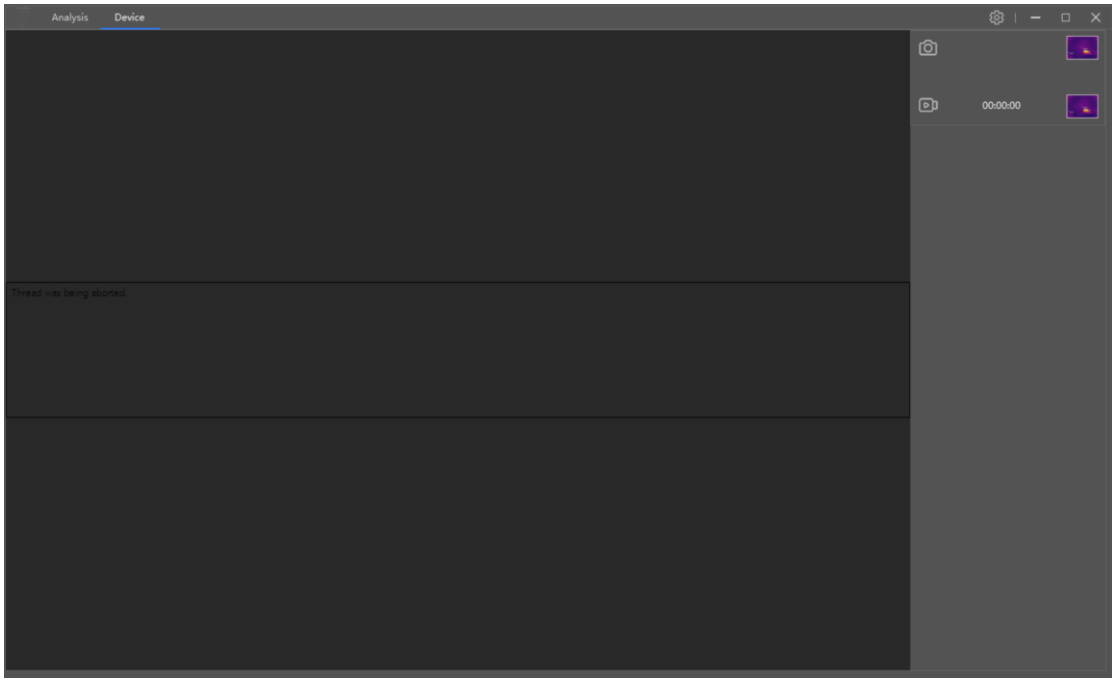
8 . 3 .1 Operating Environment

It is recommended to install this software on Windows 10 and later operating systems to ensure normal and stable operation of the software.

8 . 3 . 2 Main Interface

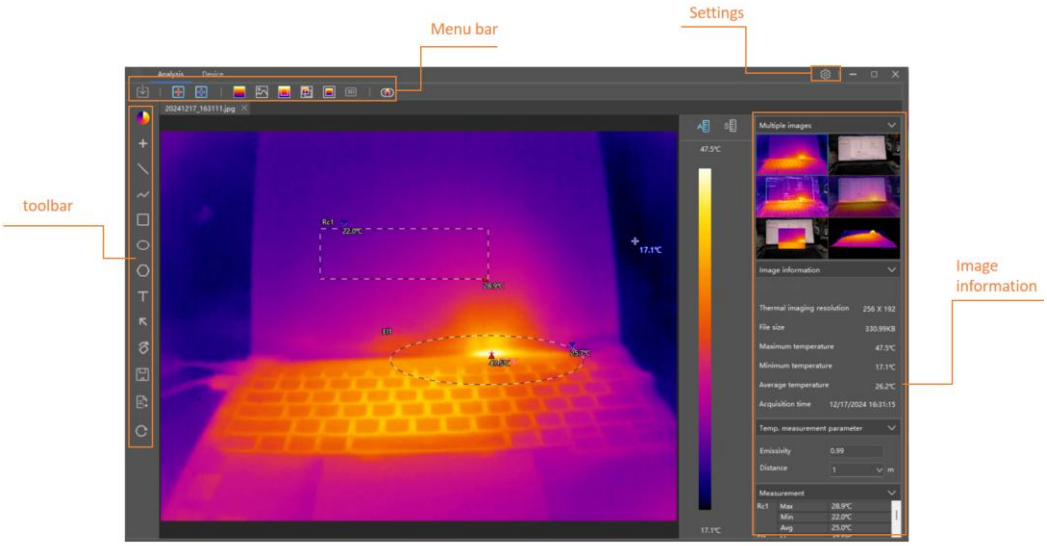
Open the software, which includes the thermal image analysis section and camera import section. The interface is shown in the figure below.





8 .3.3 Radiometric analysis

Import the image into the radiometric analysis sector for analysis. The interface is shown in the figure below.



The toolbar contains the following functions:

NO.	Function	Functional description
1	Color palette	Different color palettes can be replaced as needed
2	Points	Select to display the temperature information of the corresponding point on the image
3	Line	Draw a line on the image and observe the highest and lowest temperature on the line.
4	Polyline	Draw a polyline on the image and observe the highest and lowest temperatures on the line.
5	Rectangle	Draw a broken line on the image and observe the highest and lowest temperatures on the line
6	Ellipse	Draw an ellipse on the image and observe the highest and lowest temperatures on the line

7	Polygons	Draw a polygon on the image and observe the highest and lowest temperatures present on the polygon.
8	Text	Annotate images with text
9	Arrow	Markup arrows on images
10	Rotate	Rotate the image 90° clockwise
	Horizontal mirror	Mirror image horizontally
	Vertical mirror	Mirror image vertically
11	Save	Save the image
12	Export Report	Export graphical analysis reports
13	Reset Screen	Restores the graphics, rotation angle, and color temperature area drawn on the screen to its initial state

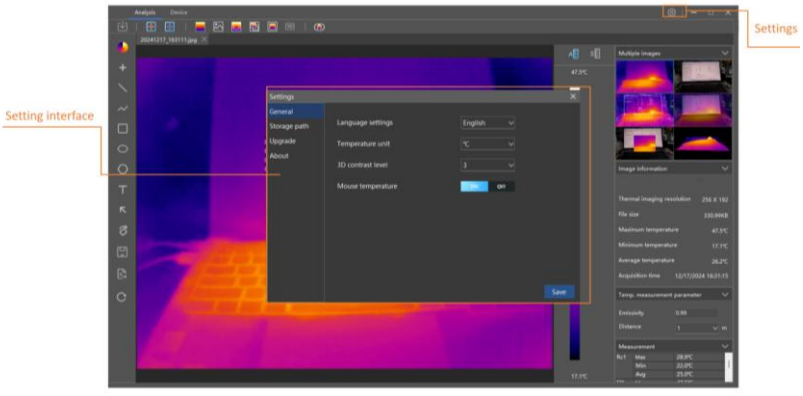
The menu bar contains the following functions:

NO.	Function	Functional description
1	Files	Open, close, save, export file reports
2	High temperature	Cancel or enable high temperature display in image
3	Low temperature	Cancel or enable low temperature display in image
4	Thermal imaging	Switch to thermal imaging
5	Visible light	Switch to visible light image
6	Feathering edges	Switch to edge blending image
7	Overlapping Blending	Switch to the Overlay Blending Image

8	Picture in picture	Switch to picture-in-picture
9	3D	Change 3D Image
10	Fusion alignment	Thermal and visible light images are not completely fused, so they can be universally fused, aligned, and adjusted.

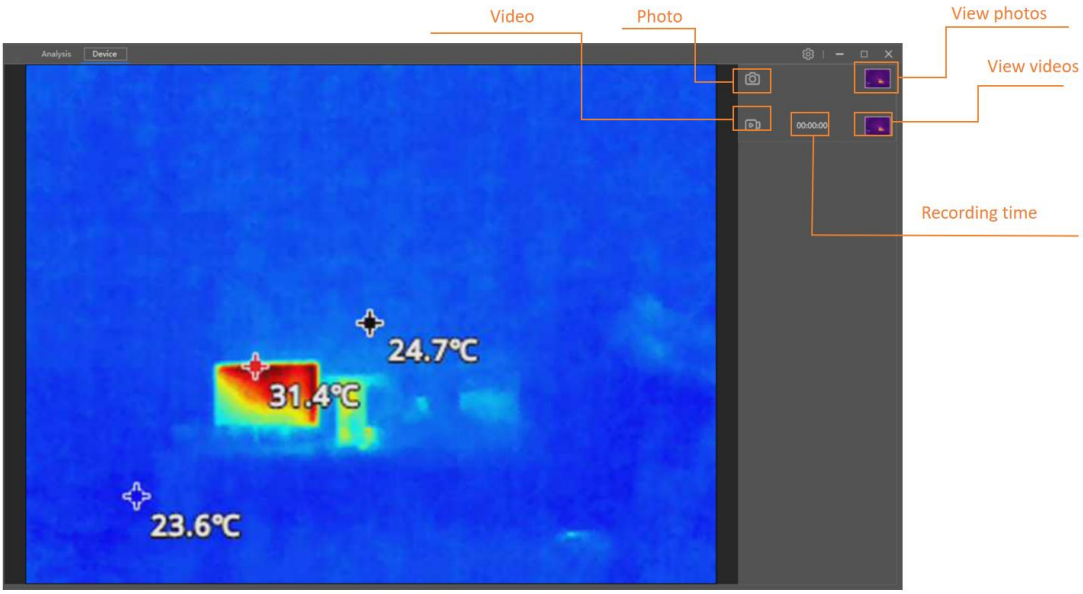
 "In the top right corner of the software you will find the setting options, which include the following:

NO.	Options	Description
1	Language settings	It supports English, French, German, Spanish, Russian, Japanese, Korean, and Chinese.
2	Temperature unit	Celsius, Fahrenheit, Kelvin
3	3D contrast level	Adjust image contrast in 3D mode
4	Mouse temperature	Enable or disable the temperature display feature on the image when the mouse is turned on
5	Storage location	Storage location for images, reports, and videos
6	Update	To upgrade the version
7	About	Software name, version number.



8 .3.4 Importing the Camera

The camera import section requires the portable camera to be connected to the computer via USB. Once connected, the camera screen can be synchronized with the camera's import section, and photo/video operations can be completed in the upper left corner.



The camera import interface feature contains the following contents:

NO.	Function	Functional description
1	Photos	After successfully connecting the camera, click the camera to take photos.
2	Video	After successfully connecting the camera, click the record button with the mouse: the recording icon turns red, and the recording time on the right starts to change, indicating that the recording was successful. Click Register again to complete the registration.

3	View photos	By clicking with the mouse on the photo you can enter and see more details
4	Watch videos	By clicking with the mouse on the video you can enter and see more details

9 Precautions and Warranty

WARRANTY CONDITIONS

This instrument is guaranteed against defects in materials and workmanship, in accordance with the general conditions. During the warranty period, defective parts may be replaced, but the manufacturer reserves the right to repair or replace the product. If the instrument is to be returned to the after-sales service or to a dealer, the transport is at the expense of the customer. The shipping wort, however, be agreed. In a report to send an explanatory note about the reasons for the tool must always be included. Only for transport use the original packaging. Any damage caused by the use of non-original packaging is the responsibility of the customer. The manufacturer accepts no liability for damage caused to persons or property.

The warranty does not apply in the following cases:

- Repair and/or replacement of accessories and battery (not covered by warranty).
- Repairs required due to incorrect use of the tool or its use with incompatible equipment.
- Repairs made due to improper packaging.
- Repairs required due to work carried out by unauthorized personnel.
- Modification of the instrument without the explicit permission of the manufacturer.
- Use not covered by the instrument specifications or instruction manual.

- The contents of this manual may not be reproduced in any form without the permission of the manufacturer.
- Our products are patented and of their own brands. The manufacturer reserves the right to change specifications and prices if this is due to technological improvements.

ASSISTANCE

If the tool is not working properly, check the condition of the battery and the wear of the cables before contacting Customer Service and replace them if necessary. If the instrument continues to malfunction, check whether the procedure for using it complies with the instructions in this manual. If the instrument is to be returned to the after-sales service or to a dealer, the transport is at the expense of the customer. The shipping wort, however, be agreed. In a report to send an explanatory note about the reasons for the tool must always be included. Use only the original packaging for shipping; Any damage caused by the use of non-original packaging is the responsibility of the customer.

- Do not expose this device to dust or moisture.
- Do not directly expose the lens to bright light sources, such as sunlight and lasers, as this may cause permanent physical damage.
- Do not disassemble the device yourself, otherwise you risk damaging it.
- When the product is not used for a long time, it is recommended to remove the battery and store it in a dry and cool place.
- Do not place the device in a high-temperature environment or near high-temperature objects.
- Never use organic cleaners such as alcohol and detergents to clean the lenses. It is recommended to clean them with a soft object moistened with water.

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