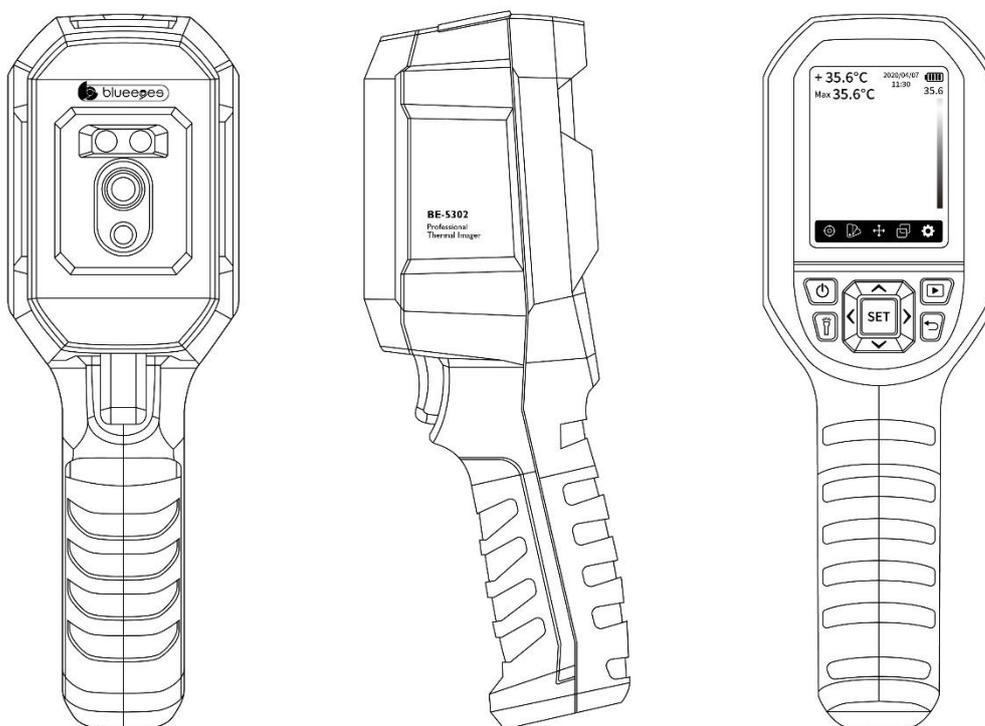


**BlueEyes<sup>®</sup>**

# BE-5302 Thermal imager



## User Manual

2020/4/24

[www.BlueEyes.com.tw](http://www.BlueEyes.com.tw)



# User Manual

This manual applies to the following products

❑ BE-5302 Thermal Imager

Thank you for using BlueEyes Technology's products.

This manual will introduce BlueEyes Technology products. It is recommended that you read this manual before you start using the product.

Although the information in the manual has been verified in detail before publication, the actual product specifications will be based on the time of shipment. BlueEyes Technology makes no warranties, proclamations or implied warranties, and no other special purpose for the contents of this manual. In addition, the product specifications and information mentioned in this manual are for reference only and may be updated from time to time without notice. BlueEyes Technology is under no obligation to assume any responsibility for any errors in the information contained in this manual, including software, firmware and hardware.

Any product specifications or related information updates, please go to BlueEyes Technology official website directly, the company will not be notified. If you would like to get the latest product information, user manuals, firmware, or have any questions about BlueEyes products, please contact your local supplier or go to the official BlueEyes website for information.

The contents of this manual may not be copied or used without the written consent of BlueEyes Technology, or otherwise altered in the information and distribution of this manual.

The contents of this manual are the copyright of BlueEyes Technology.

## BlueEyes Technology

7F-3, No.200, Sec. 4, Wenxin Rd., Taichung City 40462, Taiwan

+886 4 2297-0977 / +886 982 842-977

support@blueeyes.com.tw

www.BlueEyes.com.tw



# Index

1. Introduction.....	4
1.1 About this manual .....	4
1.2 Precautions and restrictions before use .....	5
1.3 place .....	7
1.4 cleanliness .....	7
1.5 Pedestrian flow control and route planning .....	8
1.6 Height and shooting angle .....	9
1.7 Temperature detection of major areas .....	10
1.8 moisture-proof.....	11
1.9 Service .....	11
1.10 Temperature measurement and calibration .....	11
1.11 Intellectual Property Rights .....	12
1.12 Updated Information .....	12
2. Specification .....	13
3. Appearance .....	14
4. Show Description .....	15
5. Power on/off .....	16
6. Calibrating .....	16
7. Measurement.....	17
8. Palette .....	18
9. Point Temperature.....	20
10. Image Mode .....	21
11. Settings.....	23
11.1 Language.....	23
11.2 Date and Time.....	24
11.3 Temperature unit .....	25
11.4 HI/LO Alert .....	26
11.5 Measurements.....	28
11.6 Display brightness .....	29
11.7 Auto power off.....	30
11.8 USB mode .....	31
11.9 Auto save .....	32
11.10 System settings .....	33
11.11 Device information .....	34
11.12 Factory reset .....	35
11.13 Format SD card .....	36
12. Emissivity.....	37
13. Temperature compensation (Temp comp) .....	38
14. Image view .....	39
15. Image Capture .....	40
16. Illumination .....	41
17. SD card .....	41
18. Charging .....	41

19. Maintenance .....	41
20. USB connection to PC.....	42
21. Safety.....	43
22. Notes for use .....	43
23. Software .....	44
23.1 System Requirements .....	44
23.2 USB mode for software.....	44
23.3 USB camera.....	45
23.4 USB disk .....	48

# 1. Introduction

## 1.1 About this manual

Thank you for purchasing the BE-5302 Thermal Imager. In order to use this product properly, please read the entire manual carefully before using it, especially the section on "Safety precautions before use".

If you have read this manual in its entirety, it is recommended that you keep it in a safe place with your thermal imager or in a place where you can access it at any time for future use.

This manual will help you to quickly and effectively understand the functions and operation

Please read this manual carefully before using the product.

1. Read the instruction manual carefully and keep it for safekeeping. Follow the instructions in the instruction manual.
2. The screen display icons used in this manual may not match the graphics displayed on the screen. This may be caused by different software versions.
3. The version is indicated on the cover of this manual, so be sure to make sure the version you use is the same as the one in this manual.
4. Please ask us again for the latest version of the manual if it is different.
5. If you want to check the current firmware version, the Settings screen will show the current firmware version.
6. The Company recommends that you keep a separate written record of all important information and in some cases, the information stored in the electronic storage device may be lost or altered, therefore, the Company will not be responsible for the loss and unavailability of the information, whether due to misuse, repair, defect, expiration of use or any other reason.
7. The Company shall not be responsible for any economic loss or claim arising from the use of this product or any other features by third parties, such as the use of third party DIY firmware, loss or alteration of stored data, etc.
8. The screen layout in this user manual may differ from the actual layout, depending on the version of the software.
9. The information in this user manual is subject to change without prior notice, for details, please pay attention to BlueEyes Technology official website service support.

10. The Company is not responsible for the content downloaded from the Internet.

## 1.2 Precautions and restrictions before use

To ensure proper use of this product, please read the following items and restrictions carefully before using.

1. Please read this manual carefully before using the product.
2. Infrared imaging thermometers can set the temperature compensation according to the field environment. If infrared imaging thermometers are used to measure the surface temperature of the human body, the surface temperature will change due to the measurement environment, the shape of the human body surface and the wearable, etc. The actual temperature of the human body must still be measured by government certified medical devices, such as ear guns, etc. Thermal imaging devices are not medical grade devices and cannot be used as the main actual temperature measurement of the human body. Temperature results are for reference only and should not be used as a basis for medical identification.
3. To avoid the risk of fire, electric shock or product damage, do not expose the machine to rain, dampness or liquid splashes, and do not place water containers such as vases on the machine.
4. Do not place this machine in a bookcase, hidden cabinet or other enclosed space. Do not allow curtains or any other object to block the ventilation holes to avoid the risk of electric shock or fire from overheating the machine.
5. Do not place an open flame source such as a lit candle on top of the unit.
6. Do not open the case to avoid electric shock. Only those who are professionally trained and certified by our company should open them.
7. The best test distance for the infrared thermometer is 50-75cm, and the temperature measurement error within 1m is  $\pm 0.5^{\circ}\text{C}$ .
8. The infrared video pyrometer is mounted on a three-legged camera stand, which is used for horizontal detection to achieve a more accurate measurement rate.
9. To ensure measurement accuracy, it is recommended to use at an operating environment of  $15^{\circ}\text{C}$  to  $30^{\circ}\text{C}$  and  $\text{RH} < 85\%$  (non-condensing).
10. Use the infrared video thermometer in a windless indoor environment.
11. Pedestrian flow control should be carried out at the detection site, and the measuring line should be mainly passed by a single person in slow steps, otherwise it will affect the

accuracy of the infrared video pyrometer measurement.

12. The subject should be kept at a certain distance from the former, or the direction of the thermal imager should be changed to avoid overlapping images from affecting the temperature measurement. Thermal radiation can also be affected by the passing of time by keeping your head down or wearing a hat, which should be avoided as much as possible, otherwise the accuracy of the infrared thermometer measurements will be affected.
13. The ambient temperature of the test should be stable and should not be measured in areas with high airflow such as fans, air vents of air conditioners, etc. Avoid heat sources (e.g. drinking fountains, overhead lamps, sunlight, etc.), air outlets (e.g. ventilation doors, fans, etc.) and infrared surveillance cameras when erecting or installing infrared video thermometers.
14. When switching to a new environment, turn the product on and leave it for 10 to 15 minutes before measuring.
15. The ambient temperature should be stable and should not be measured in areas with high airflow such as fans, air conditioning outlets, etc.
16. When the measurement object comes from a place where the temperature difference in the measurement environment is relatively large, it is necessary to stay in the measurement environment for 10 to 30 minutes before taking the measurement.
17. The thermal imager measures the surface temperature of the object, and if temperature compensation is required, go to the Setup page to adjust it.
18. This product has a self-calibration function, if the reading has a rapid jump, please wait for 30 seconds or so, wait for the reading to be stable before taking the measurement.
19. When the actual temperature differs from the measured temperature due to environmental factors, the infrared video pyrometer needs to be temperature compensated.
20. Do not start measuring other subjects immediately after measuring the temperature of an extremely high or low temperature object, and leave for 10 minutes.
21. Infrared video thermometers should not be used in places with strong sunlight because the radiant heat of the sunlight will affect the temperature sensor's detection.
22. The infrared image pyrometer should not be used in an electromagnetic interference field.
23. The infrared thermometer has operating limitations in small spaces because it is too close to focus.

24. If the screen is completely white, it is likely that the screen, the mask or the front lens is fogged with condensation.
25. An infrared thermometer measures and captures images by the infrared radiation heat emitted by an object. In fact, since the radiation is a function of the surface temperature of an object, an infrared video thermometer can calculate and display this temperature. However, the radiant heat measured by an infrared imaging thermometer is not only dependent on the temperature of the object itself, but is also a function of emissivity. Radiation can also come from the surrounding environment and be reflected on objects. Radiation from an object and reflected radiant heat are affected by atmospheric absorption. To obtain accurate temperature measurements, it is necessary to compensate for some effects caused by different sources of radiation. Therefore, the thermal imaging camera must make reference to the emissivity and reflection of the object's apparent temperature parameters.
26. The application of infrared thermal imaging cameras has its limits. In fact, it is judged by experienced users that the absorption and radiation of infrared rays on the surface of different materials to form a thermal image will be affected by the material and geometry of the surface. That is, we cannot rely solely on the images we obtain to determine whether they are actual differences or changes in temperature.

## 1.3 place

1. Place the machine on a flat surface, away from direct sunlight, and avoid high temperature, high humidity and frequent vibration. Failure to do so will result in damage to the chassis and other internal parts, thereby shortening the life of the machine.
2. The machine must be placed away from heat sources such as heaters, heat regulators, furnaces and other heat generating products.
3. Use the product in a dry, ventilated and stable environment to avoid malfunction.

## 1.4 cleanliness

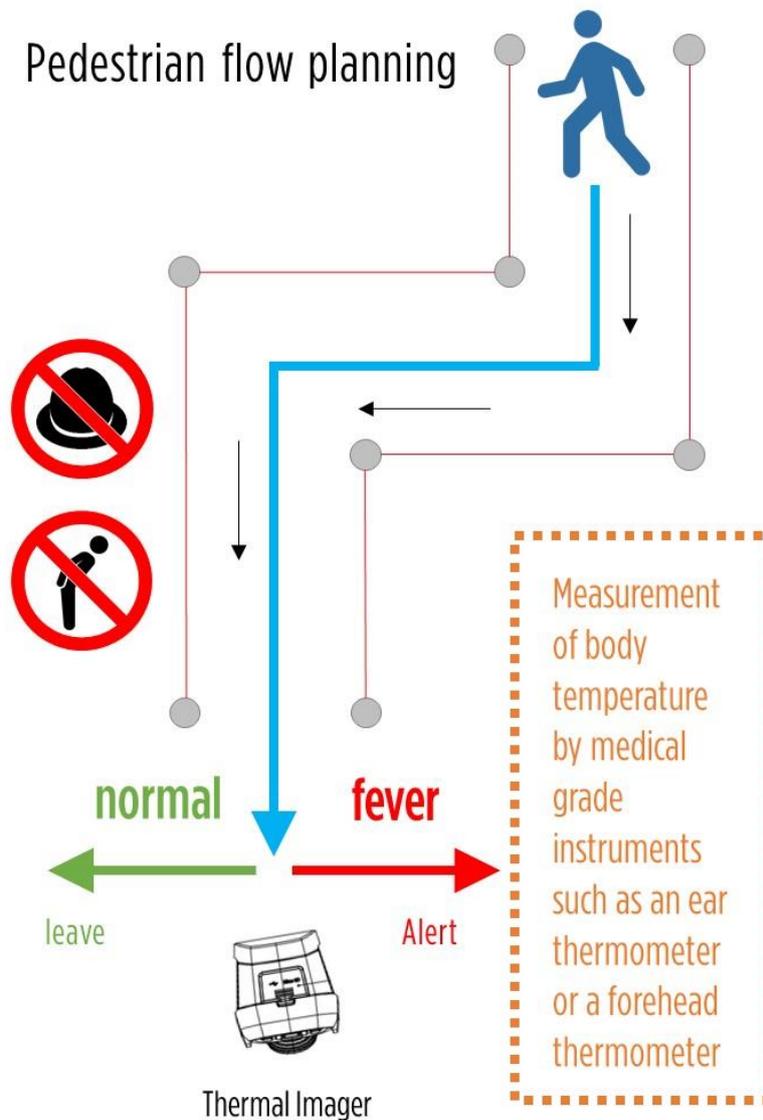
1. Unplug the power cord before cleaning the unit.
2. For difficult to clean spots, soak a soft cloth in water, wring it out, wipe it off, and dry the machine with a soft dry cloth.

3. Do not use any solvents, such as thinners and gasoline-based solvents, as such solvents can damage the surface of the machine.

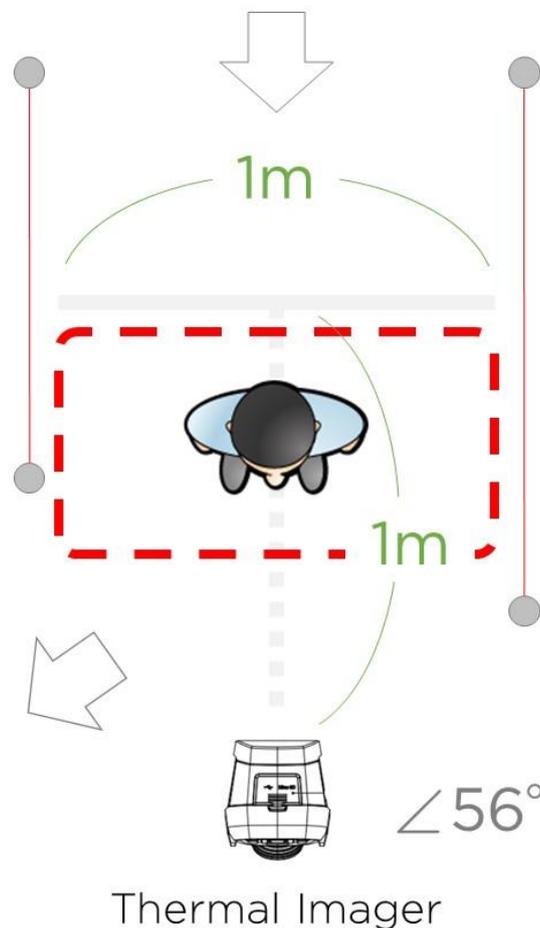
## 1.5 Pedestrian flow control and route planning

It is recommended that the detection of the field of pedestrian flow control, the use of railings or red dragon posts to guide the queue of people, the measurement of the moving line to a single person to pass slowly as the main, requiring the subject to take off the hat, do not bow their heads, and the former to maintain a certain distance, can be social distance of 1.5m for the front and back of the distance between the two people, otherwise it will affect the accuracy of the measurement of infrared video thermometer.

The following is our proposed route arrangement.



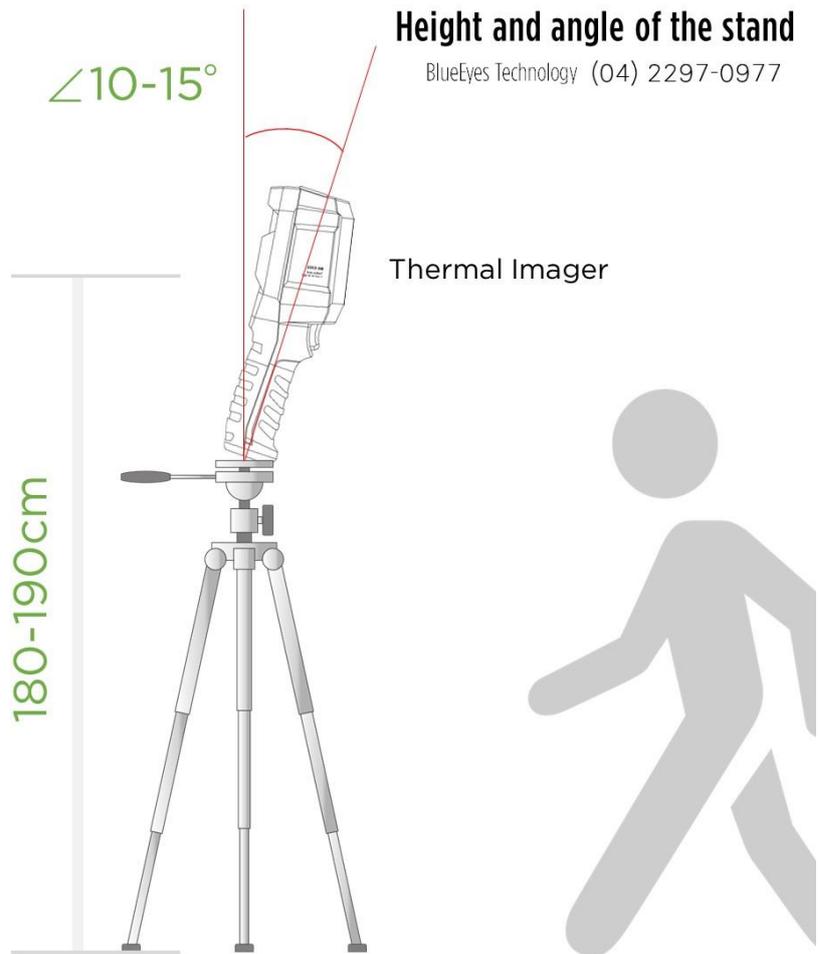
# Standing Area



## 1.6 Height and shooting angle

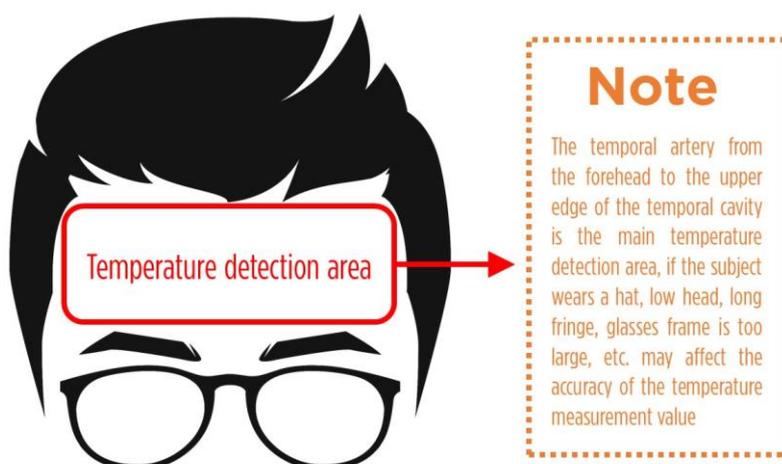
Infrared video thermometer with a standard 1/4 inch camera lock hole, mounted on a standard tripod used by the camera, set the height of the general person above the height, about 180-190 cm or so, if it is an elementary school, tutorial class, safety class and other institutions, depending on the average height of the students can be adjusted, about 10-15 cm or so above the average height, infrared video thermometer shooting angle to look down 10-15 degrees frontal view, single person one-way through the basic policy, when the distance from the infrared video thermometer about 50 cm after turning to pass, to ensure that the subject can be infrared video thermometer to capture the forehead temperature.

The following is our recommended height and shooting angle for the thermal imager.



## 1.7 Temperature detection of major areas

The temporal artery from the forehead to the upper edge of the temporal cavity is the main temperature detection area, which may affect the accuracy of the temperature measurement if the subject wears a hat, has a low head, has a long fringe, and has too large a frame.



## 1.8 moisture-proof

1. Avoid damp areas such as damp basements when using this machine.
2. Condensation is prone to occur in the following situations.
  - When you move the machine from cold to warm all of a sudden
  - When you use the machine in a room where the heating is just turned on, or where the machine is placed where the air conditioning and heating sweep is located
  - Move a machine that has just been used in an air-conditioned room to a hot and humid place during the hot summer months

## 1.9 Service

1. Do not repair this machine without permission.
2. If the machine is repaired, disassembled or assembled by non-professional personnel, electric shock may occur or damage may be caused to the machine.
3. When the machine is used in an abnormal way, this generally means that it needs to be repaired
4. When replacement parts are required, ensure that the service technician replaces the factory-specified parts with parts with the same characteristics as the original parts. Replacement parts in violation may cause fire, electric shock or other damage.
5. In the event of any of the following or other malfunctions not specified in the manual, please contact your agent or our service center.
  - Abnormal image, illuminated indicator, fumes
  - Liquid or foreign matter is spilled into the machine
  - After rain or watering the machine
  - When the machine falls from a height or is damaged for other reasons
  - When the machine is operated according to the instructions in this manual but does not work properly

## 1.10 Temperature measurement and calibration

Under normal use, there is basically no need to calibrate the temperature of this equipment. In the event of a large measurement deviation and the automatic calibration is not possible, you can send it back to us for calibration.

## 1.11 Intellectual Property Rights

Under normal use, there is basically no need to calibrate the temperature of this equipment. In the event of a large measurement deviation and the automatic calibration is not possible, you can send it back to us for calibration.

## 1.12 Updated Information

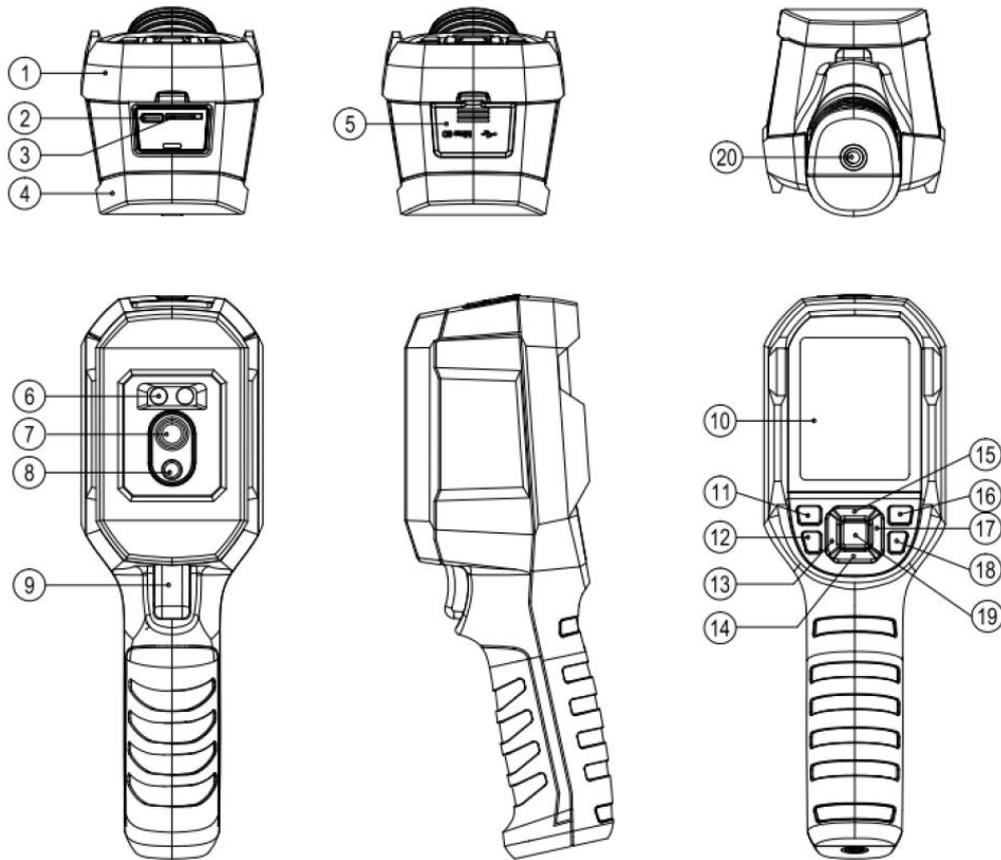
The Company reserves the right to amend, adjust or change the contents of this manual, and in case of any incomplete matters, shall comply with the relevant regulations or explanations of the Company, and may at any time make supplementary announcement on the official website at the following address

<https://www.blueeyetech.com>

## 2. Specification

Sensor	Uncooled focal plane
Temperature range	30°C~45°C
Resolution	0.1°C
Accuracy	±0.5°C @1m
Minimum measuring distance	15cm
Temperature measurement response time	≤500ms (95% of reading)
Pixel of thermal imagery	19200 (160×120)
Pixel dimensions	12μm
Palettes	Iron red, rainbow, white, black, red, lava, high-contrast rainbow
Bandwidth of infrared spectroscopy	8~14μm
Field of view (FOV)	56°(H) × 42°(V)
Instantaneous field of view (IFOV)	6mrad
Thermal imaging sensitivity	< 50mk
Frame rate	< 9Hz
Temperature display	Center temperature measurement and high temperature tracking (default)
Image format	BMP
Image modes	Thermal imagery, digital camera (visible light), fusion
Temperature measuring point	Besides central point, 3 temperature measuring points can be added
Visible light	√
Resolution of visible light	640×480
Display resolution	320×240
Mixed setting	0% (total visible light), 25%, 50%, 75%, 100% (total thermal imagery)
PC analysis software (PC)	√
Real-time image transmission	√ (PC software image projection)
Data communication	Type-C USB
Auto power off	Selectable (5min, 10min, 30min), 30min auto power off (default)
Service time	≥6 hours
Charging time	≤5 hours
Charging voltage/current	5V/2A
Image storage	Micro SD card
Power	A single Li-ion 3.7V/5000mAh 26650 battery
Display	2.8" TFT LCD
Product size	236mm x 75.5mm x 86mm
Standard accessories	Manual, Type-C USB cable, 16GB TF card
Standard carton gross weight	2.2kg

### 3. Appearance

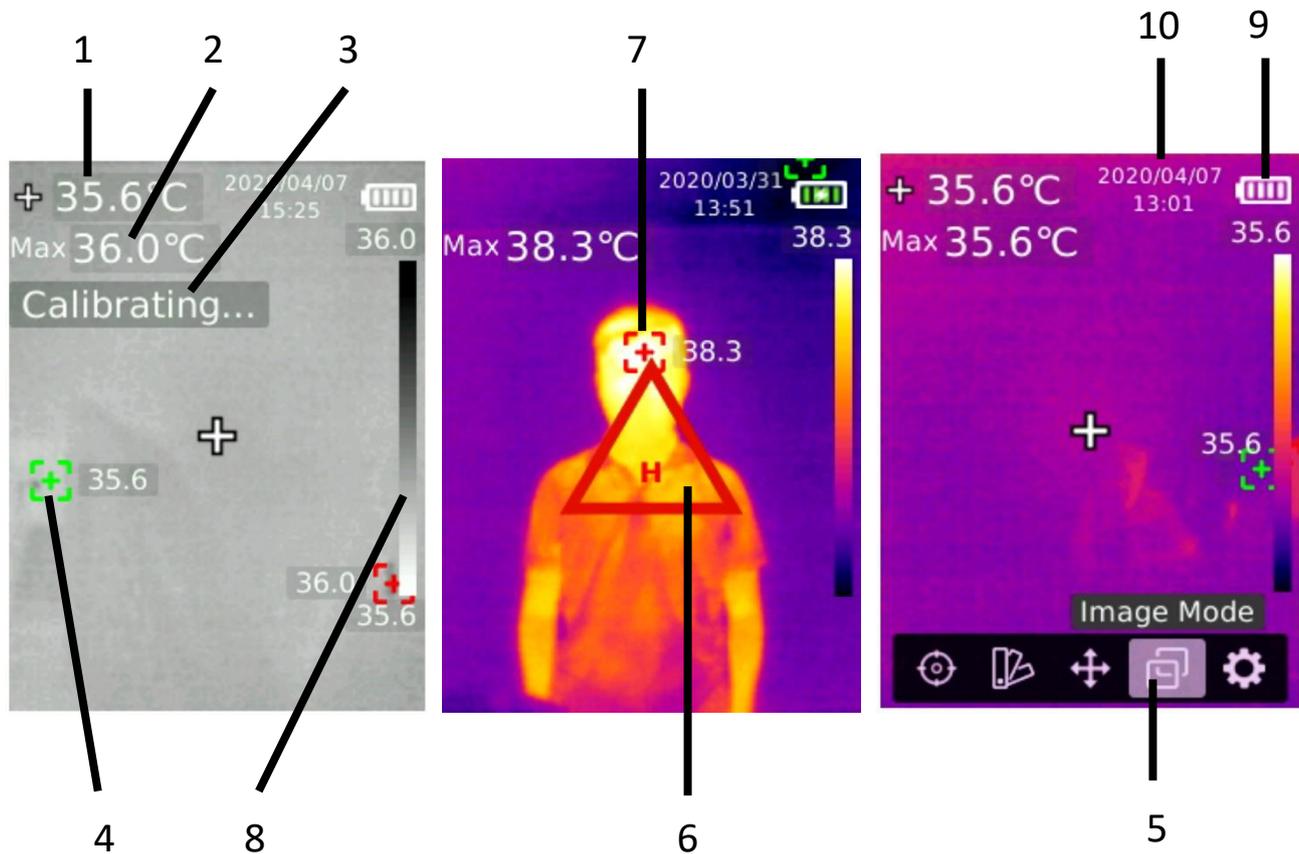


No.	Description	No.	Description
1	Upper casing	11	Power Switch
2	USB Type-C terminal	12	Turn white light on or off
3	SD card slot	13	Left button
4	Lower casing	14	down key
5	Terminal Protection Cover	15	up key
6	White Lighting	16	Photo Browser
7	Infrared Thermal Imaging Lens	17	right click
8	Visible Light Lens	18	Back to button
9	Take a shot of the trigger button.	19	SET Setting Key
10	LCD monitor	20	Bracket fixing screw holes

# 4. Show Description

Screen Size: 2.8

Resolution: 320 (vertical) x 240 (horizontal)



No.	Description.	No.	Description.
1	Center temperature	6	High Temperature Warning
2	Automatic tracking of temperature maximums	7	Automatic tracking of temperature maximums
3	Auto-calibration in progress	8	Temperature Color Bar
4	Automatic tracking of temperature lows	9	Current Battery Level
5	Main Menu	10	Current Time

## 5. Power on/off

Long press the power on key for 3 seconds and the thermal imaging device is turned on. After a long time of no use or a change in the measurement environment, you need to turn it on for 10~15 minutes before taking the temperature measurement. Long press power on for 3 seconds, the thermal imaging device will turn off

If the computer is connected with a USB cable, please unplug the USB cable before starting the computer, otherwise it will not be able to start the computer due to the protection mechanism of the device.

The thermal imaging camera needs to go through 5-6 seconds after starting the shutdown procedure. Please try to avoid repeatedly switching the machine on and off to avoid damage to the thermal imaging system.

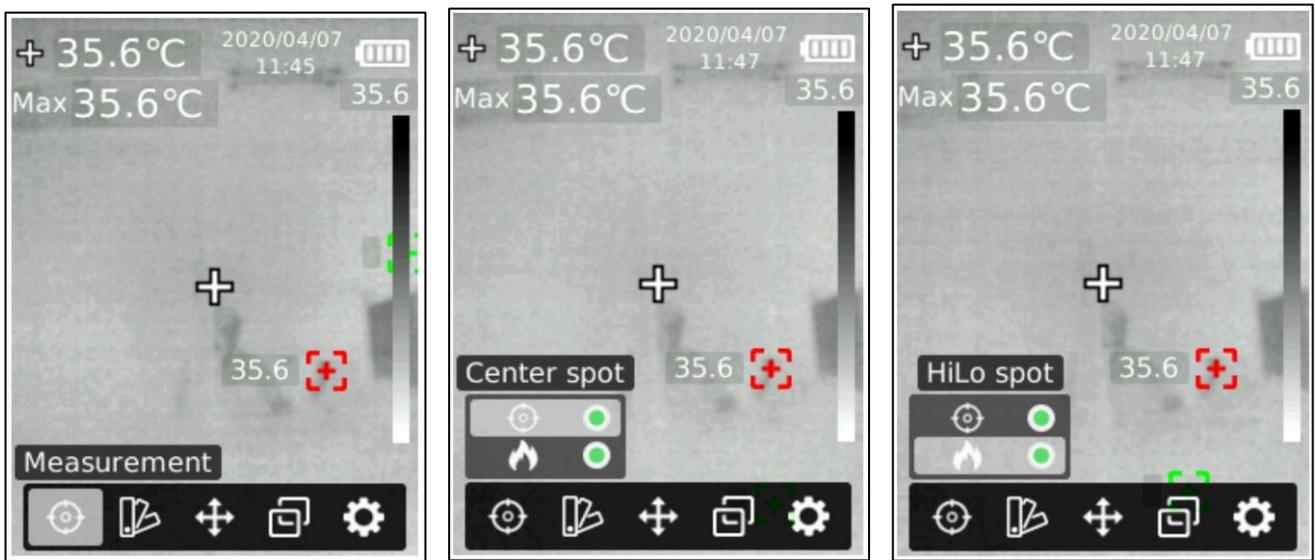
## 6. Calibrating

The product has a self-calibration function, if the reading has a fast jump, the word Calibrating will appear on the screen, do not measure at this time, wait for about 30 seconds, and wait for the reading to stabilize and the word Calibrating will disappear before measuring.



When the Calibrating... prompt appears on the screen, pause the temperature measurement, which may not be accurate. Please wait for the Calibrating... prompt to disappear before taking the measurement.

## 7. Measurement

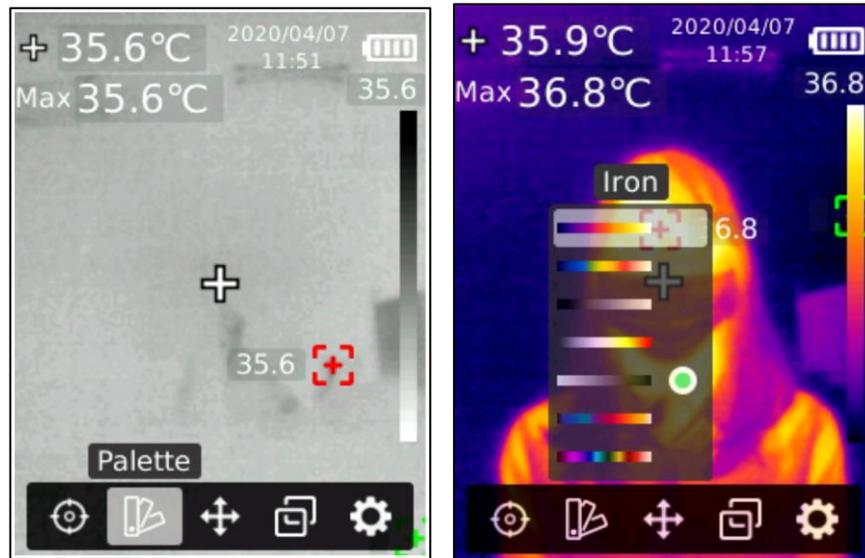


The measurement function can select whether the center point or the high and low temperature point is on or off.

1. On the Thermal Imaging Measurement screen, press SET to call up the main menu.
2. Press the left/right button to select the measurement option.
3. Press the SET button to enter the measurement selection menu.
4. Press the up/down button to select whether the center or high/low temperature point of the measurement is on.
5. Press the SET key to select the center point or high and low temperature point to open or close.
6. Press the return button to return to the main menu and thermal imaging screen.

## 8. Palette

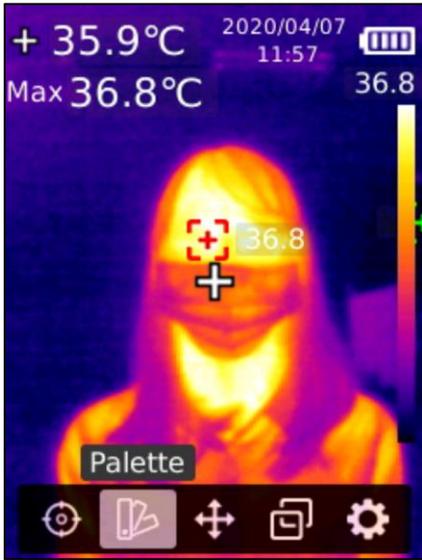
BE-5302 can choose from a variety of color palettes, so that you can adjust the most suitable color palette according to the field environment and the use of the situation, the current color palettes include Iron, Rainbow, White Hot, Red Hot, Black Hot, Lava, Rainbow HC, etc.



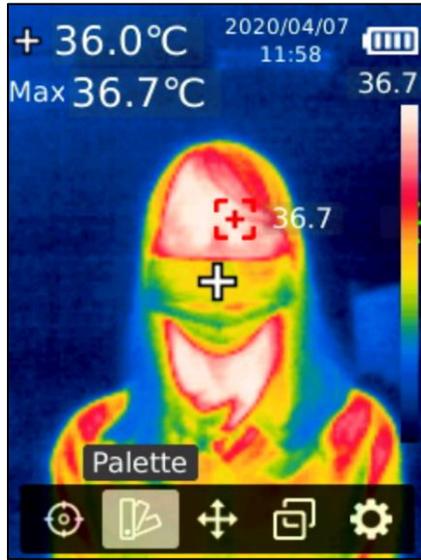
The BE-5302 is available in a variety of color palettes with the following steps.

1. On the Thermal Imaging Measurement screen, press SET to call up the main menu.
2. Press the left/right button to select the swatch options.
3. Press the SET button to enter the color palette selection menu.
4. Press the up/down button to select a different color palette.
5. Press the SET key to apply the current swatch.
6. Press the return button to return to the main menu and thermal imaging screen.

Iron



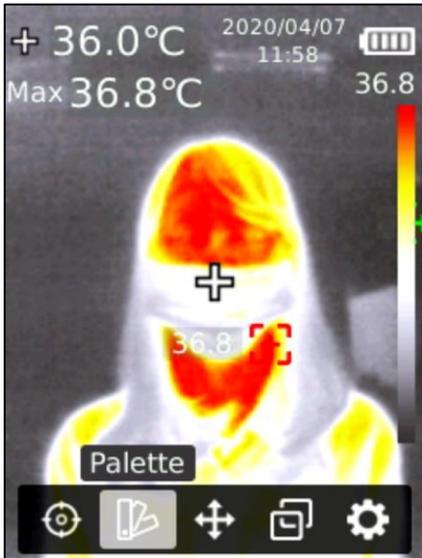
Rainbow



White Hot



Red Hot



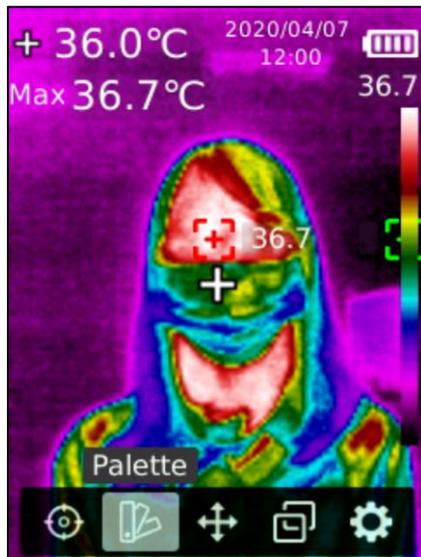
Black Hot



Lava



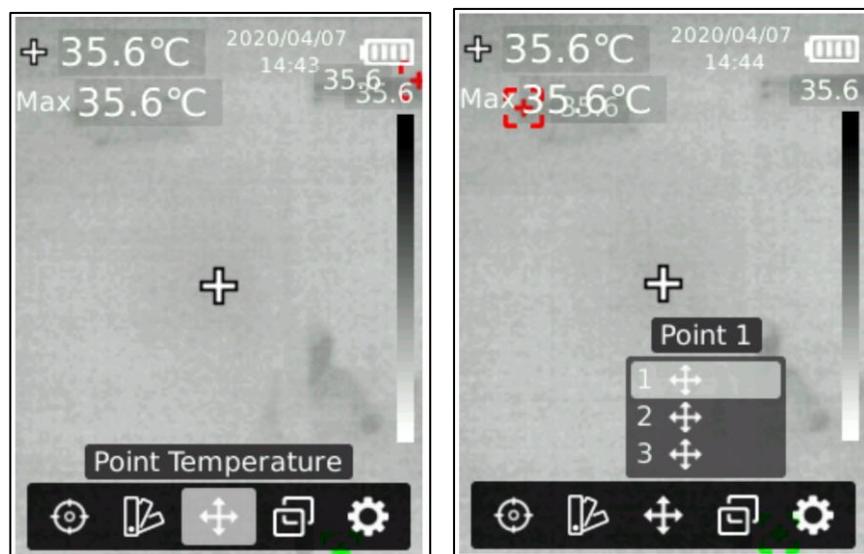
Rainbow HC



## 9. Point Temperature

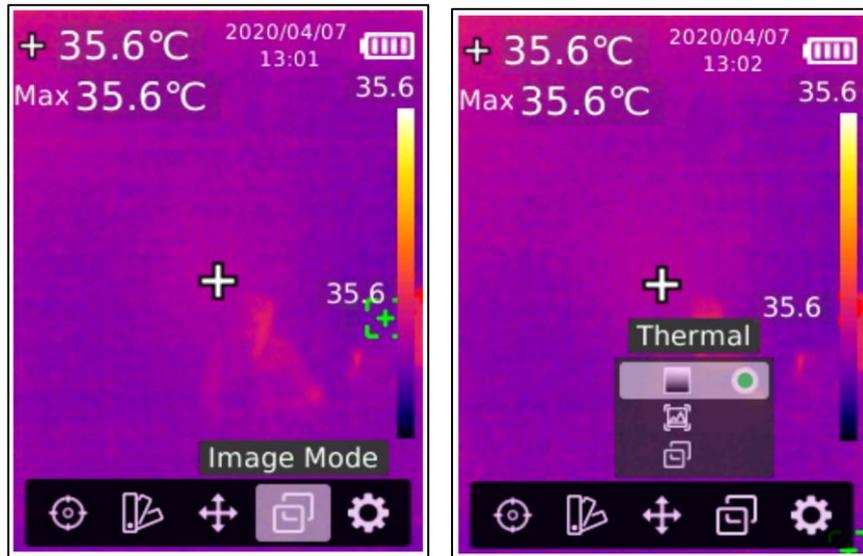
To measure the temperature, proceed as follows.

1. On the Thermal Imaging Measurement screen, press SET to call up the main menu.
2. Press the left/right button to select the temperature measurement option, then press the SET button to enter the temperature measurement menu.
3. Press the up and down buttons to select different temperature measurement points to turn on or off.
4. Select the current temperature measurement point and press SET to enter the thermal imaging measurement screen.
5. Press the left/right/up/down button to move the temperature measurement point to the area of interest, press the SET button to apply, and read the current point temperature.
6. If the current temperature point is selected to be turned off, press the SET key to turn it off.
7. Press the return button to return to the main menu.



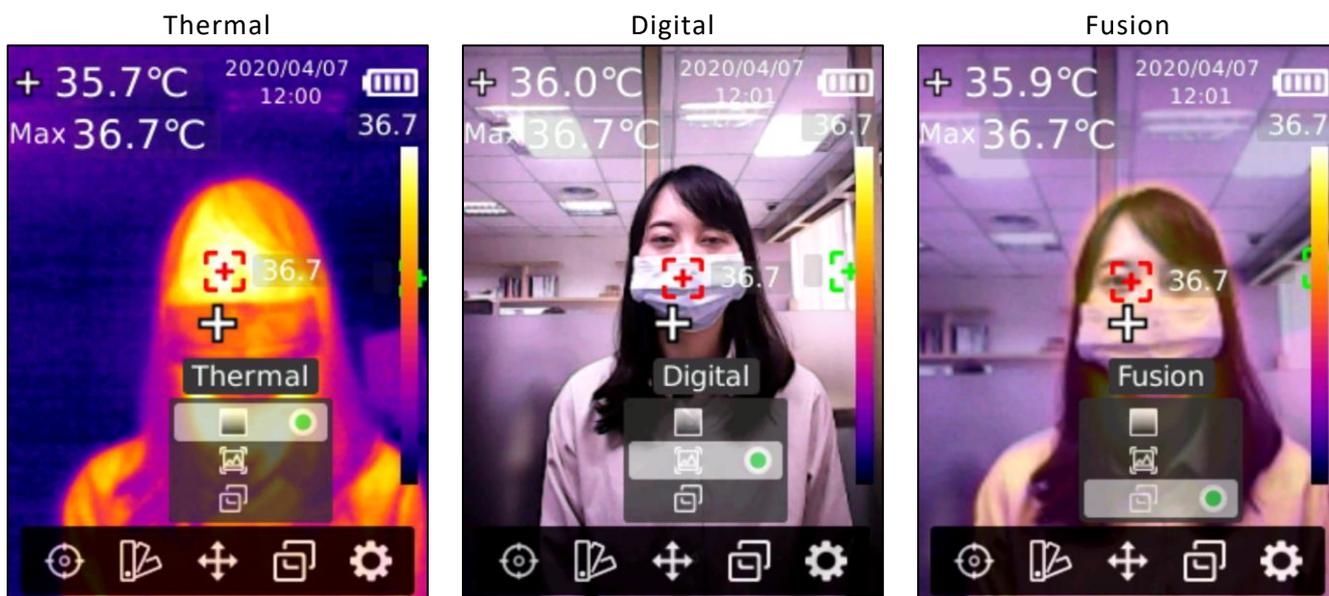
# 10. Image Mode

There are three types of Image Mode, including Thermal, Digital and Fusion.



For the photo mode, proceed as follows.

1. On the Thermal Imaging Measurement screen, press SET to call up the main menu.
2. Press the left/right button to select the photo mode configuration options.
3. Press the SET button to enter the photo mode selection menu.
4. Press the up/down button to select different photo modes, the photo modes are thermal imaging, digital camera (visible light), and fusion.
5. Press the SET key to apply the current mode after selection.
6. Press the return button to return to the main menu and thermal imaging screen.



Press the Back button to return to the Main Menu and Thermal Imaging In the fusion imaging mode, after returning to the thermal imaging measurement screen, you can select different fusion ratios by pressing the left/right button.

# 11. Settings

To set up, proceed as follows.

1. On the Thermal Imaging Measurement screen, press the SET button to call up the main menu.
2. Press the left/right button to select the setting options.
3. Press the SET button to enter the Setup secondary menu.
4. Press the up/down button to select different setting options.
5. Press the SET key to enter the corresponding setting options and configure the parameters.
6. Press the Return button to return to the previous menu level.



## 11.1 Language

You can select the language of the interface to be displayed, as follows.

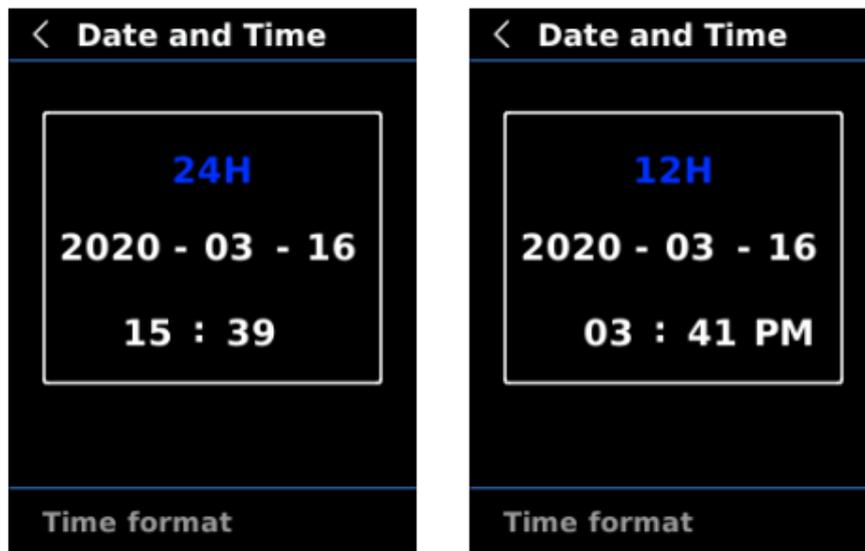
1. After entering the settings menu, press the up/down button to select the language option.
2. Press the SET button to select the language.
3. Press the up/down button to select Chinese or English.
4. Press the SET key to save the current setting.

5. Press the Back button to go back to the previous menu after setting

## 11.2 Date and Time

You can set the date and time as follows.

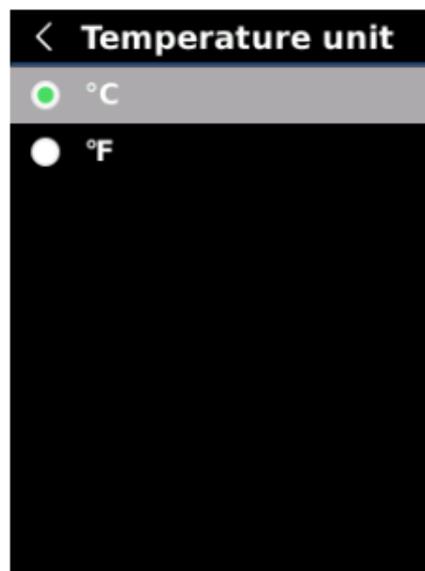
1. After entering the setup menu, press the up/down button to select the date and time setting option.
2. Press the SET key to enter the date and time setting.
3. Select different time nodes and time formats by left/right button.
4. Press the SET key to select the time node.
5. Press the up/down button to add or subtract time.
6. Press the SET key to save the set value.
7. Press the Back button to return to the previous menu after setting.



## 11.3 Temperature unit

You can set the temperature units as follows.

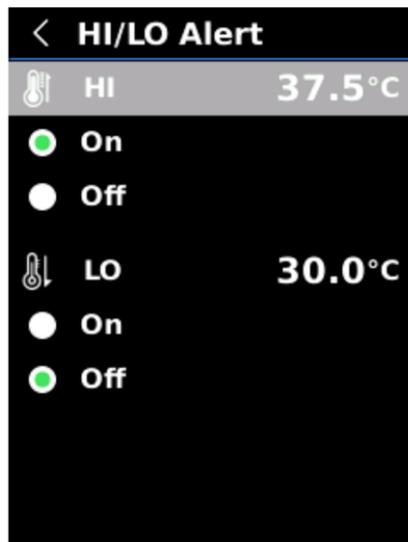
1. After entering the setting menu, press the up and down button to select the temperature unit setting option.
2. Press the SET key to enter the temperature unit setting.
3. Press the up/down button to select different temperature units.
4. Press the SET key to save the setting value, then press the Return key to return to the previous menu.



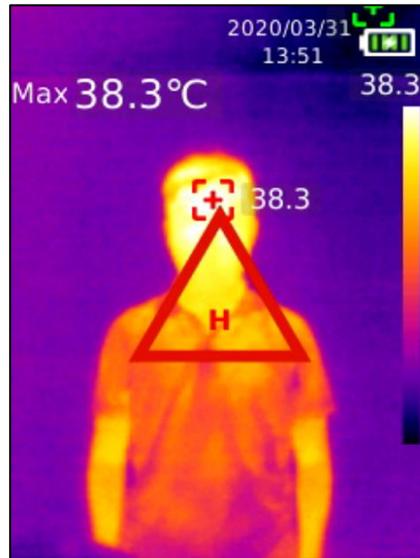
## 11.4 HI/LO Alert

You can set the temperature value that needs to be alarmed when the temperature is high or low, as follows.

1. After entering the settings menu.
2. Press the up/down button to select the High/Low temperature warning setting option.
3. Press the SET key to enter the high/low temperature warning setting.
4. Press the up/down button to select different settings to turn on or off the high/low temperature warning and set the temperature value respectively.
5. Select the temperature value and press the SET key to enter the setting value.
6. Press the up/down button to add or subtract values.
7. When finished, press the Back button to save the settings and return to the previous menu.



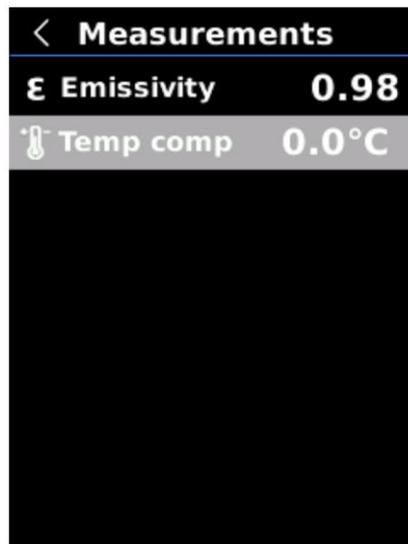
When the warning is turned on, an alarm will appear in the screen when the temperature exceeds the set range, as follows.



## 11.5 Measurements

You can set the measurement parameters as follows.

1. After entering the setup menu, press the up/down button to select the measurement parameter setting option.
2. Press the SET key to enter the measurement parameter setting.
3. Press the up and down button to select the emitting rate or temperature compensation.
4. Press the SET button to enter the setting.
5. Press the up/down button to add or subtract values.
6. Press the SET key to save the measurement parameters after setting.
7. Press the Return button to return to the previous menu level.

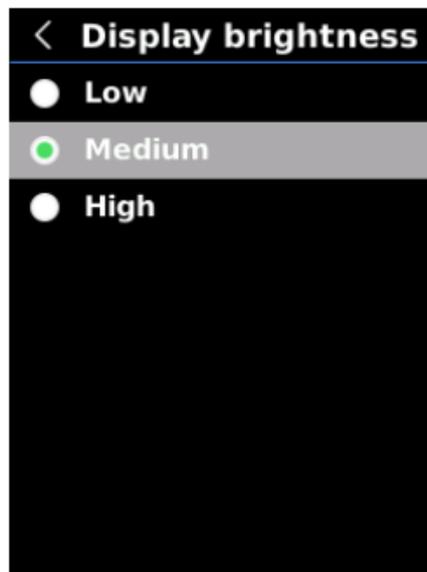


Please refer to [11. Emissivity] for details of measurement parameters.

## 11.6 Display brightness

You can set the display brightness of the screen by following the steps.

1. After entering the setting menu, press the up/down button to select the brightness setting option.
2. Press the SET key to enter the display brightness setting.
3. Press the up/down button to select different display brightness levels.
4. Press the SET key to select and save the settings.
5. Press the Return button to return to the previous menu level.



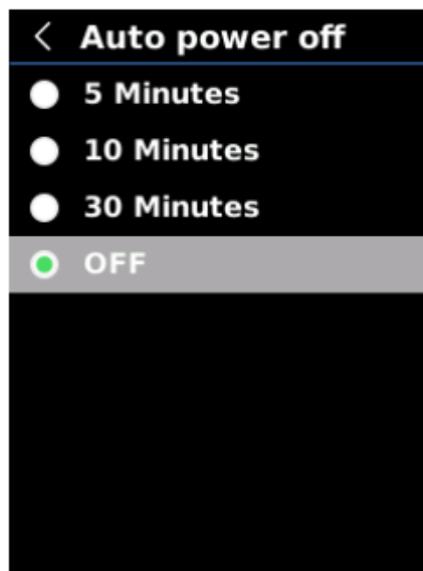
The higher the brightness, the less power consumption, the shorter the time of use of the equipment.

## 11.7 Auto power off

You can set the auto shutdown to save power and extend the time of use.

1. After entering the Setup menu, press the Up/Down button to select the Auto Off setting option.
2. Press the SET button to enter the auto shutdown setting.
3. Press the up and down button to select a different auto-off time or to turn off the auto-off.
4. Press the SET key to select and save the setting.
5. Press the Return button to return to the previous menu level.

There are four options for auto shutdown time: 5 minutes, 10 minutes, 30 minutes and off auto shutdown.



## 11.8 USB mode

You can select the USB mode of your device.

1. After entering the setting menu, press the up/down button to select the USB mode setting option.
2. Press the SET key to enter the USB mode setting.
3. Press the up/down button to select a different USB mode.
4. Press the SET key to select and save the settings.
5. Press the Return button to return to the previous menu level.

There are two types of USB modes.

1. USB disk mode: You can view photos and analyze data on your computer after connecting to a Windows computer.
2. USB camera mode: Real-time picture mirroring function can be realized when connected to a Windows PC.



## 11.9 Auto save

You can set up automatic photo saving by following the steps.

1. After entering the settings menu, press the up/down button to select Auto Save Settings.
2. Press the SET button to access the automatic photo storage settings.
3. Press the up and down button to select whether or not to turn on the automatic storage function.
4. Press the SET key to select and save the settings.
5. Press the Return button to return to the previous menu level.

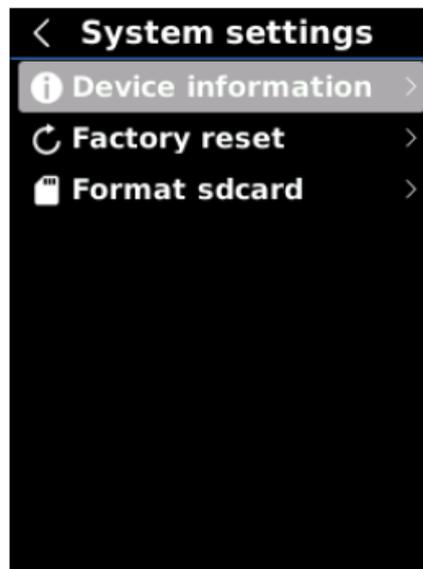


Do not disconnect the SD card while saving and viewing photos. It is recommended to store no more than 1000 photos to avoid affecting the machine's response speed. When the number of photos exceeds 1000, please clean the SD card in time.

## 11.10 System settings

The system is set up with the following steps.

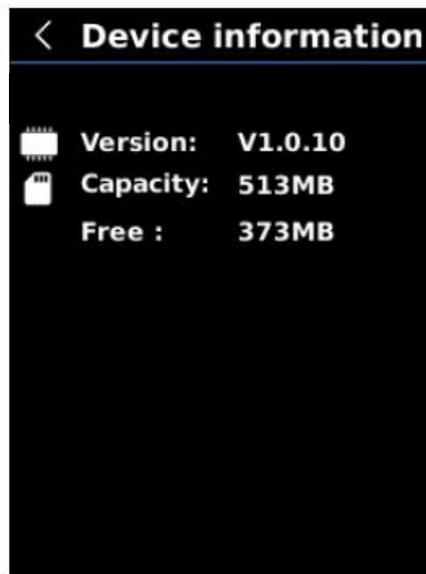
1. After entering the setup menu, press the up/down button to select the system setup options.
2. Press the SET button to enter the system settings menu.
3. Press the up and down button to select the corresponding system setting function.
4. Press the SET button to proceed to the next menu level.
5. Press the Return button to return to the previous menu level.



## 11.11 Device information

You can view the device information by following the steps.

1. In the system settings, press the up/down button to select the device information option.
2. Press SET button to access the device information.
3. Press the Return button to return to the previous menu.



The capacity here refers to the storage capacity of the SD card currently in use.

## 11.12 Factory reset

If you need to restore the factory settings, please do the following.

1. In System Settings, press the up/down button to select the Restore Factory Settings option.
2. Press the SET key to enter, then press the up/down button to select whether to resume the factory setting.
3. Press SET key to confirm.
4. Press the Return button to return to the previous menu.



Do not force other operations during the restoration of factory settings to avoid errors.

## 11.13 Format SD card

When you insert a new SD card or need to erase all data, you can format it.

1. In the system settings, press the up/down button to select the format SD card option.
2. Press the SET key to enter.
3. Press the up/down button and press the SET key to select whether to format the SD card.
4. Press the Return button to return to the previous menu.



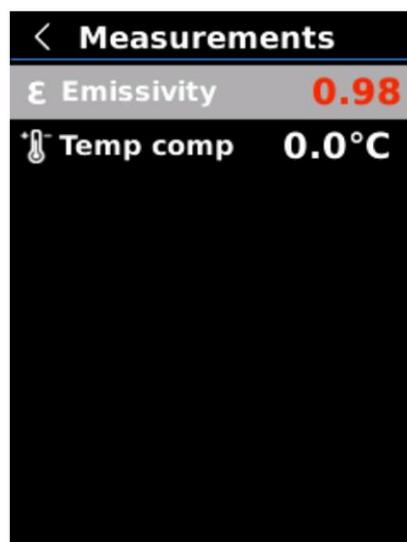
Do not forcefully remove the SD card or perform other operations during the SD card formatting process to avoid errors.

## 12. Emissivity

Emissivity is a measure of the relative strength of the energy released by the surface of an object in the form of thermal radiation. The emissivity of an object is equal to the ratio of the energy emitted by the object at a certain temperature to the energy of blackbody radiation at the same temperature. The emissivity of a black body is equal to 1, and the emissivity of other objects is between 0 and 1. Emission rate is a pure quantity. In general, the darker the color of the material or the rougher the surface, the closer the emissivity will be to 1.

The following is a reference for the emissivity of various materials.

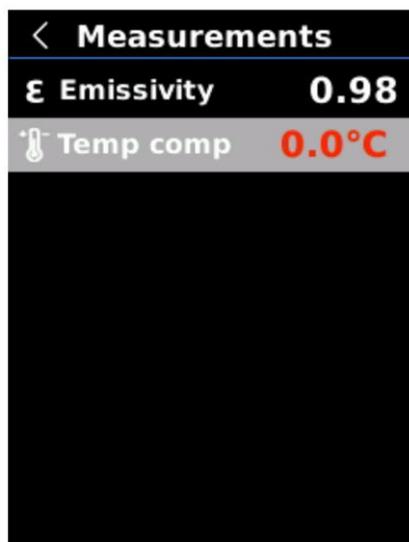
Material.	Emissivity	Material.	Emissivity	Material.	Emissivity
<b>Human Skin</b>	<b>0.95-0.98</b>	soils	0.93	polycarbonate	0.8
concrete	0.97	PVC plastic	0.93	Copper oxide	0.78
water	0.96	lacquer	0.9	brick	0.75
Tapes	0.96	black paper	0.86	gypsum	0.75
asphalt	0.96	wood	0.85	Stainless Steel	0.14
Black Aluminum	0.95	Cast iron	0.81	aluminum plate	0.09
rubber	0.95	rust	0.8	copper plate	0.06



## 13. Temperature compensation (Temp comp)

To adapt to different environments and venues, you can perform manual temperature compensation.

Please see 10.5 measurement parameters for detailed operation.

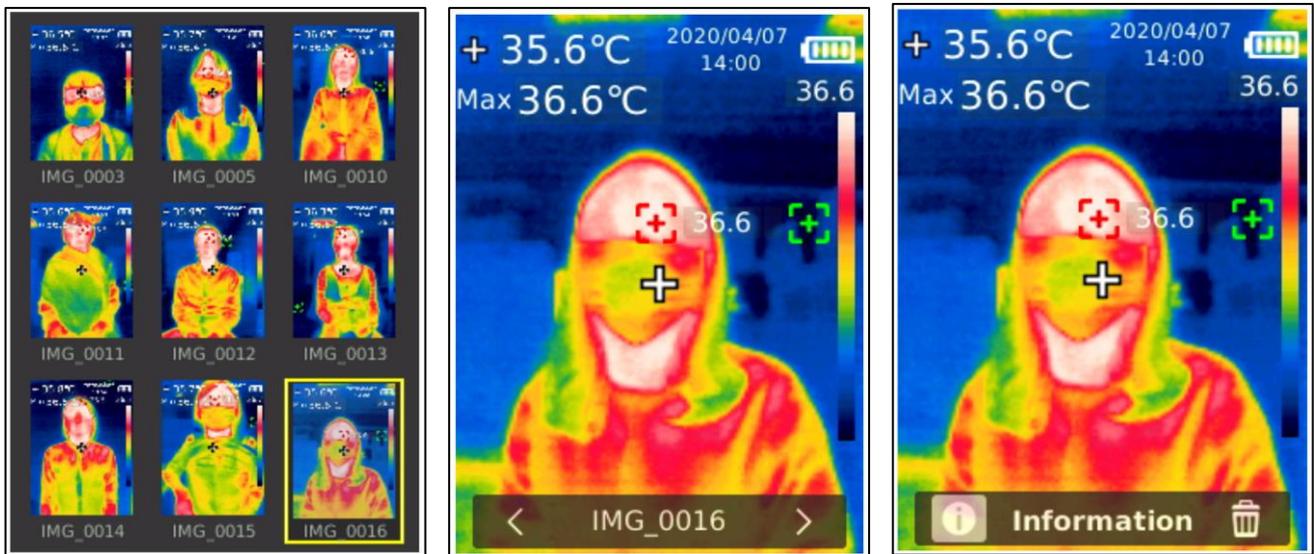


## 14. Image view

If you need to view the photos, please follow these instructions.

1. Press the Photo Viewer button to enter the Photo Viewer screen.
2. Select different photos via the up/down/left/right buttons.
3. Press the SET key to access the full screen. In full screen mode.
4. Tap the SET button to access the photo information and delete the photo.

**Note:** You cannot force the SD card to be plugged or unplugged during the photo viewing process to prevent errors.



# 15. Image Capture

If you need to take a picture, please follow these instructions.

1. Press the photo trigger button to take a photo.
2. Select whether to save photos in manual saving mode by left/right button.
3. Press the SET key to confirm or press the Return key to return to cancel this photo.

Photos are automatically saved to an SD card in auto storage mode.

Photos can only be saved when an SD card is installed. Do not disconnect the SD card while saving and viewing photos. It is recommended to store no more than 1000 photos to avoid affecting the machine's response speed. When the number of photos exceeds 1000, please empty your SD card in time.



## 16. Illumination

LED lights can be turned on or off by pressing the bright button for 3 seconds.

After the temperature warning is turned on, the LED light will automatically flash a warning when the detected temperature exceeds the set temperature range until the warning is lifted.

**Do not point the light directly at the eyes of people or animals with the light on to avoid injury.**

## 17. SD card

This device supports micro SD card (TF card) for storing photos, so to avoid excessive photo data from affecting the device's operating speed, please back up the data regularly and clean the data on the card in a timely manner.

**To avoid SD card data abnormalities caused by hot disconnect, please do not disconnect the SD card repeatedly, and always disconnect the SD card when the power is off.**

## 18. Charging

This device supports 5V/1A or 5V/2A power transformer charging, this device does not come with a power transformer, please use a power transformer with safety certification for charging.

**If you need to reboot the device, please unplug the Type-C USB cable, disconnect the power and reboot the device.**

## 19. Maintenance

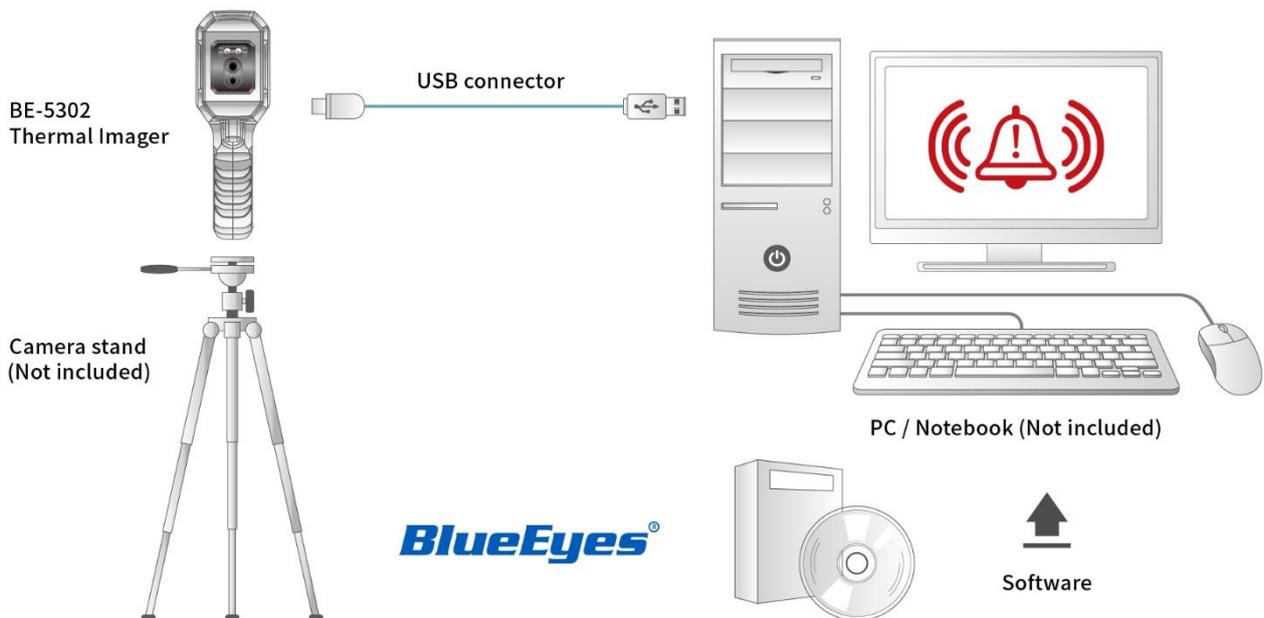
Clean the structure's outer shell with a damp cloth or weak alkaline soap solution.

**Never use abrasives, isopropyl alcohol or solvents to clean the casing or lens of an instrument.**

## 20. USB connection to PC

You can use a USB cable to connect to a Windows computer to enable large screen display with preset or custom audio alerts when over temperature.

1. Please contact your agent or our company to obtain the BE-5302 computer software and complete the installation.
2. After setting the USB mode to USB disk mode, connect the USB cable to your computer and use the software to browse photos and analyze data.
3. After setting the USB mode to USB camera mode, connect the USB cable to the computer and use the software to realize the real-time picture mirroring function.



Please pay special attention to the following!

1. After the USB mode is set, be sure to turn off and then turn on the computer before connecting it.
2. Do not unplug the USB cable while the computer is mirroring (projecting). After using the software, please turn off the software and then unplug the USB cable.

## 21. Safety

To ensure the accuracy of your measurements, please read the instructions carefully. Please be sure to use this product according to the instructions, otherwise there will be no free warranty after damage is caused to the product. Do not use this instrument in flammable and explosive, around vapors, in humid or corrosive environments. Do not continue to use the instrument after it has been damaged, dropped or corrected to avoid incorrect measurement results.

## 22. Notes for use

Please refer to the radiation coefficient information for the actual temperature, otherwise the measured temperature will be inaccurate. To ensure the accuracy of the product, it is recommended to preheat the machine for 10 to 15 minutes before measurement when the machine is turned off for a long period of time.

As charging will cause the temperature inside the body to rise, which will affect the accuracy of temperature measurement, it is recommended not to perform temperature measurement when charging the product.

Due to the inherent temperature drift characteristics of the sensor, the sensor will occasionally have inaccurate temperature measurement, the sensor will automatically open the shutter and make temperature correction, in order to product measurement accuracy must wait for the temperature to stabilize before reading the value.

## 23. Software

Please ask your vendor or BlueEyes Technology for software to use with the BE-5302.

### 23.1 System Requirements

The computer on which the software is installed must meet the following specifications.

- CPU at 1GHz or higher
- 1GB or more of memory
- HDD with 2GB or more remaining space
- USB 2.0/3.0

The software supports the following operating systems:

- Microsoft Windows 7
- Microsoft Windows 8
- Microsoft Windows 10

If the operating system is lower than the above version, please update the operating system first.

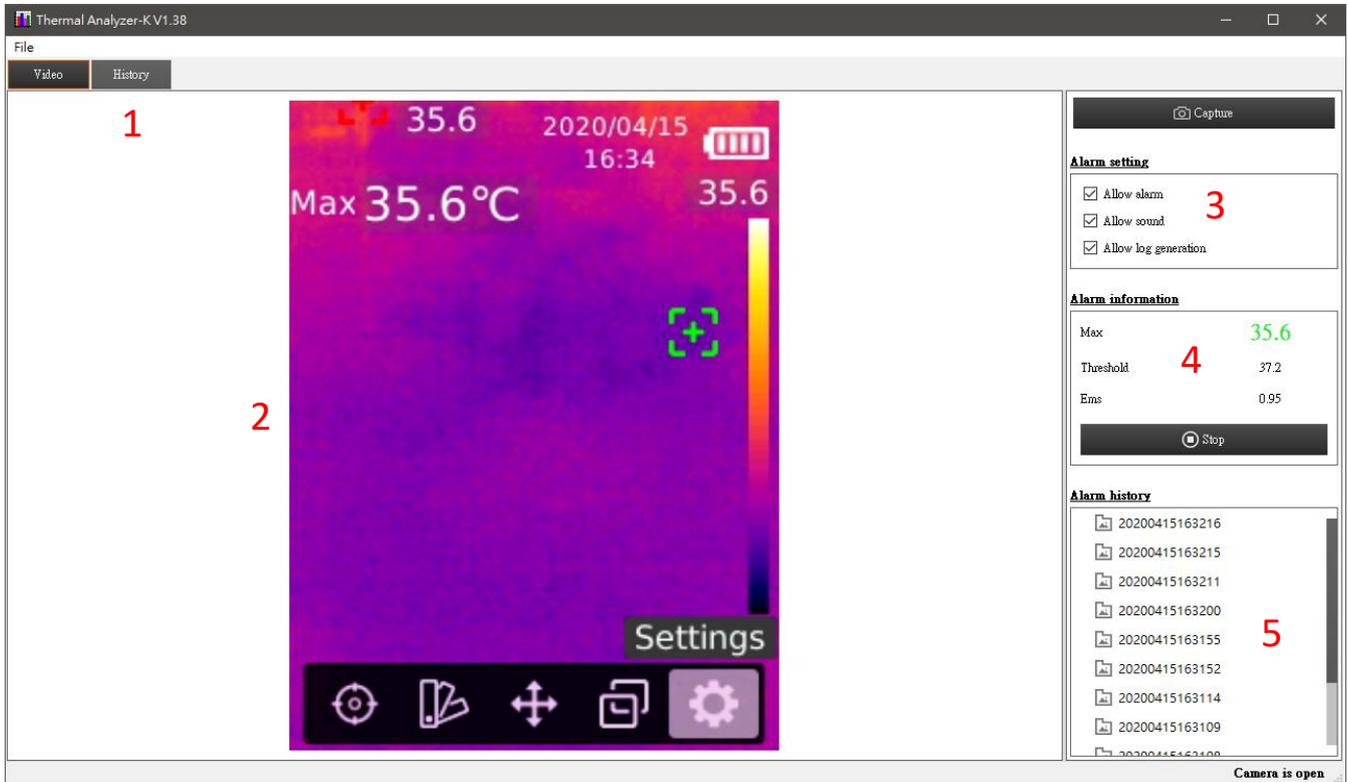
### 23.2 USB mode for software

The software has the following two USB modes, the software itself can automatically recognize which mode the current BE-5302 setting is.

1. USB camera mode: Real-time picture mirroring when connected to a Windows computer.
2. USB disk mode: you can view photos and analyze data on your computer after connecting to a Windows PC.

## 23.3 USB camera

### Interface and basic functions

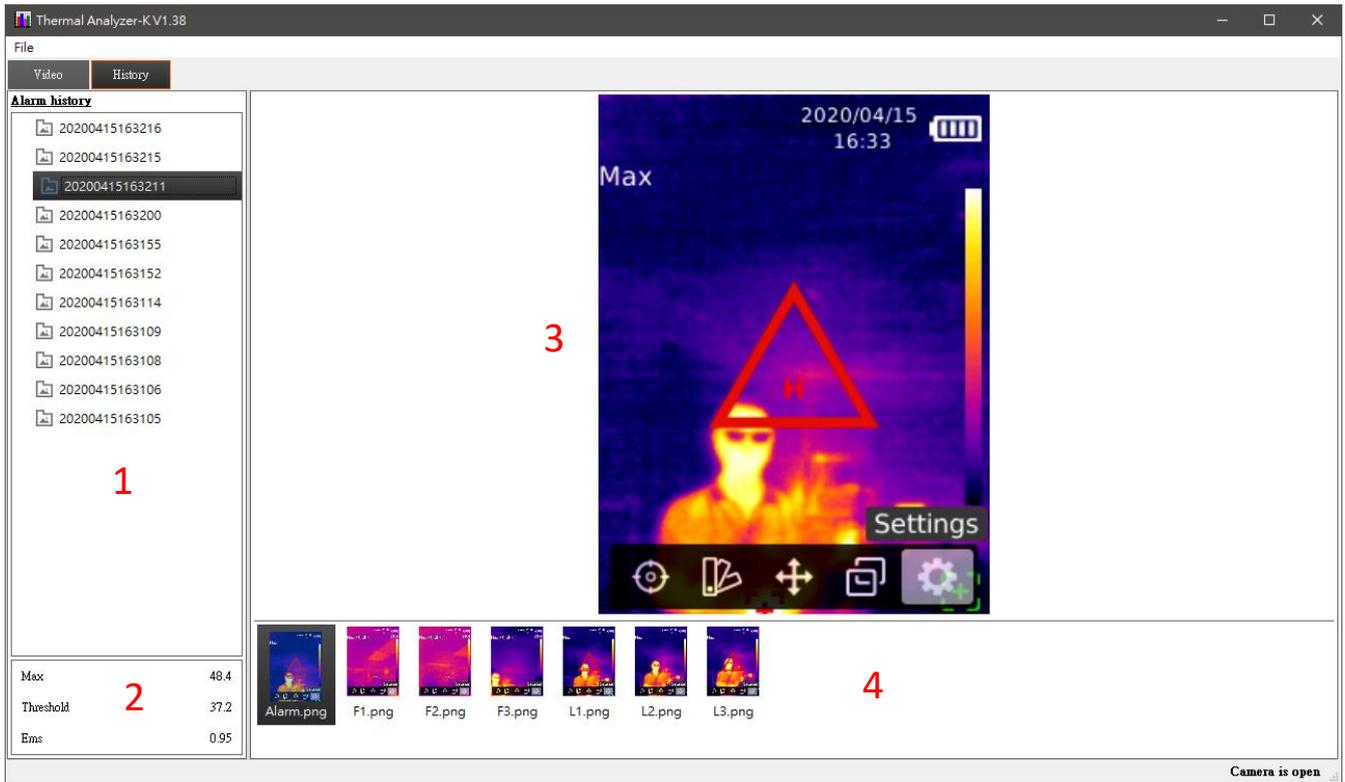


Zone	Description.
1	Option to view live image or alarm history
2	Live Image
3	alarm setting
4	Alarm Information
5	List of alarm history

#### Full screen mode

- Press Zone 2 twice to enter full screen mode.
- Double press Zone 2 or press the ESC key to exit full screen mode.

## View Alarm History



Zone	Description.
1	List of alarm history
2	Alarm Information
3	Alarm Image
4	List of images used for alarm (F is before alarm, L is after alarm)

## Alarm function

When the maximum temperature exceeds or equals the alarm valve value.

- When the alarm function is enabled, the maximum temperature value in zone 4 is displayed as a warning color flashing.
- When an audible alarm is enabled, an audible alarm will be alerted.
- When alarm generation is enabled, an alarm history file will be generated, and images of the time of the alarm (1 image) and before and after the alarm (3 images each) will be

saved if conditions are met.

### **Change the alarm file**

For example, you can add a guiding phrase such as "If you are passing through the test area, please go to the review area for further temperature measurement, thank you for your cooperation".

C:\Program Files (x86)\Thermal Analyzer-K\Sound\EN

# 23.4 USB disk

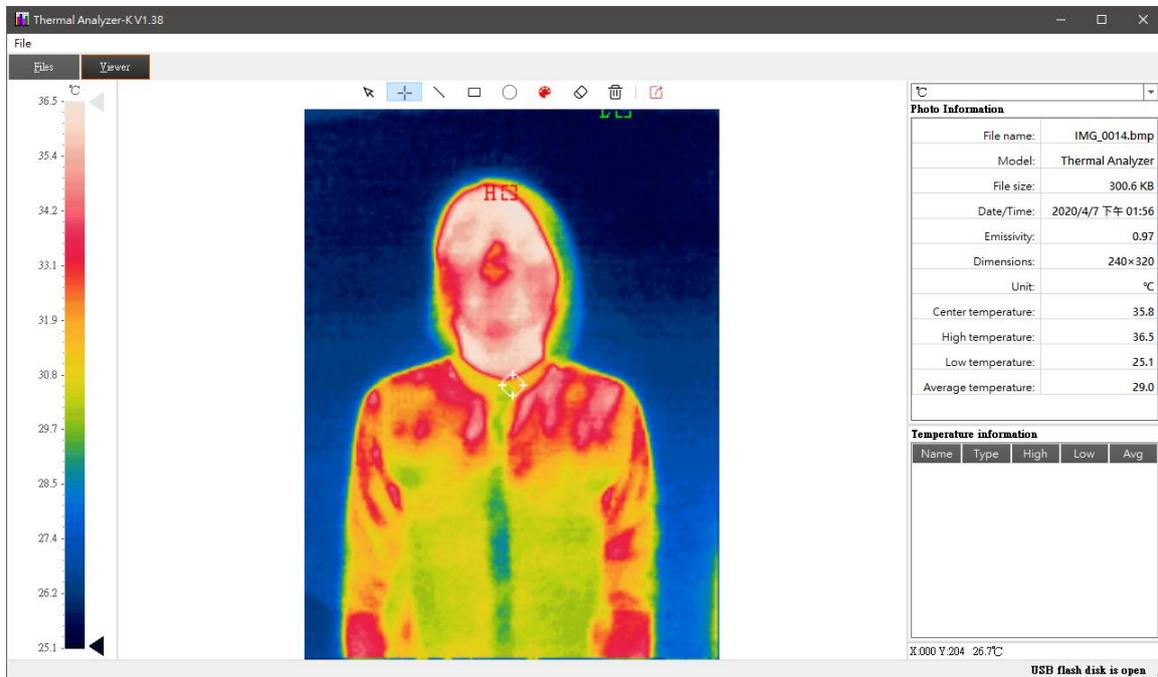
## Interface and basic features



Area	Description
1	Menu.
2	Option to view a list of images or image information
3	List of folders in SD memory card
4	Picture List

## View image

Double-clicking on any of the 4 image files in the Area 4 image list will open the current image file and display the relevant information.



The details of the picture will be displayed on the right side of the window.

Photo Information	
File name:	IMG_0014.bmp
Model:	Thermal Analyzer
File size:	300.6 KB
Date/Time:	2020/4/7 下午 01:56
Emissivity:	0.97
Dimensions:	240×320
Unit:	°C
Center temperature:	35.8
High temperature:	36.5
Low temperature:	25.1
Average temperature:	29.0

## Analyze pictures



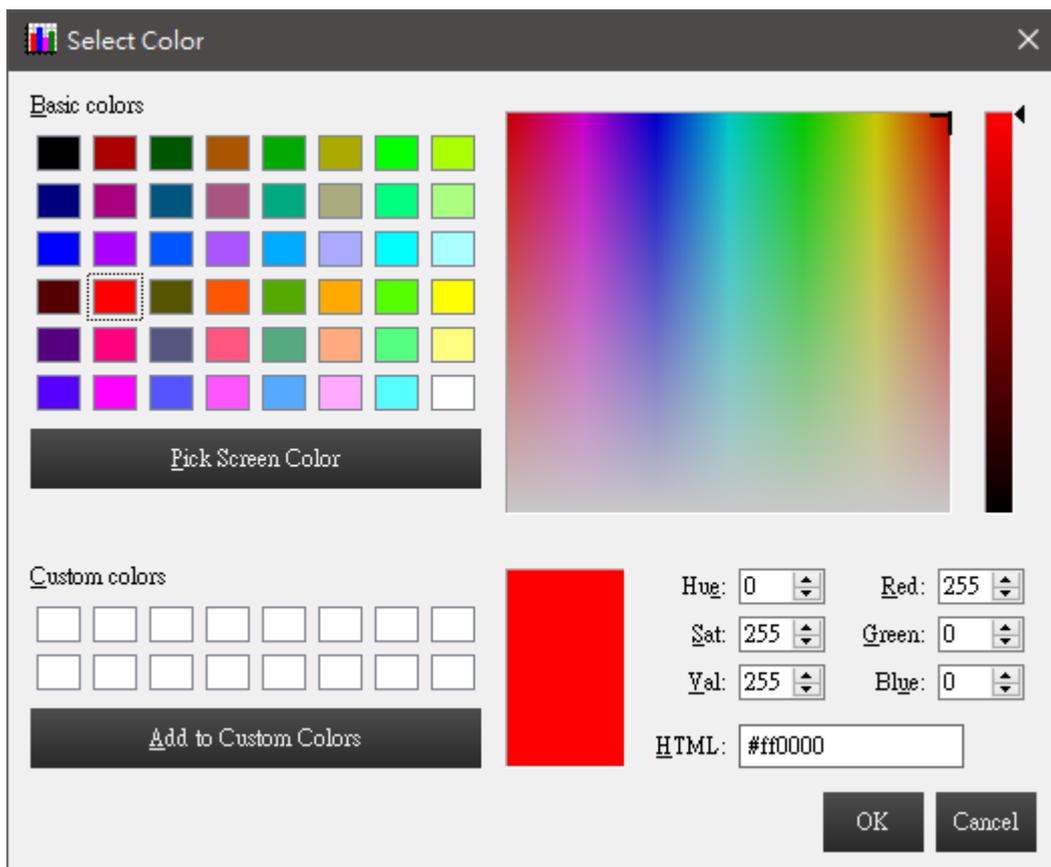
The above graphs contain all the analysis tools.

- Used to select an existing drawing, the selected drawing is shown as a dotted line.



Select points, lines, rectangles, and circles to draw on the picture, and on the right side you will record the data of the drawn picture.

- Used to select the color to be painted.



- ◇ Used to delete selected drawing graphics.

 Used to delete all drawing graphics.

 For exporting image files.

## Other

In the bottom right corner of the window, the temperature of the Meta point where the image cursor is located is displayed.

X:000 Y:204 26.7°C

The top right corner of the window is used to set the temperature units, either Celsius or Fahrenheit.

°C

---

This is the end, thank you for your patience in reading!









## **BlueEyes Customer Service Center**

7F-3, No.200, Sec. 4, Wenxin Rd., Taichung City 40462, Taiwan  
+886 4 2297-0977

All information in the BlueEyes Customer Service Center Manual is based on the BlueEyes standard test method, if there are any printing errors or translation errors, please understand. This manual or product design and specifications are subject to change without notice. The screen terms, icons, etc. in this manual may be slightly different from the actual situation, so please refer to the actual operation.