

## IRTC900

### Professional Thermal Imaging Camera



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Welcome, and congratulations on your purchase of the Triplet IRTC900 Professional Thermal Imaging Camera with manual and auto focus designed to deliver fast, accurate, and reliable thermal images for a wide range of applications. Whether you are inspecting electrical systems, diagnosing HVAC issues, conducting building inspections or preventive maintenance, the IRTC900 is built to help you work smarter, faster, and safer.

## **1. Introduction**

- This handheld Professional Thermal Imaging Camera is used for electrical inspections, mechanical diagnostics, and building inspections, and more.
- Focus the lens on the object and the thermal and visual images are displayed; images and videos can be saved to the microSD card.
- Transferring images to a PC is accomplished by removing the microSD card and connecting it to a PC or through the InfraRead app.

## **2. Safety Information**

- Do not disassemble or modify the camera as this would void the warranty.
- Do not point the camera at intensive energy sources, for example devices that emit laser radiation or the sun as this can have unwanted effects on the accuracy of the camera and damage the detector.
- Do not use the camera in temperatures higher than 50°C (122°F) or lower than -20°C (-4°F). Operating in too high or too low temperatures can cause damage to your camera.
- Only use the correct equipment to charge the battery. If you do not use the correct battery charger, you can decrease the performance or the life cycle of your battery. It can also cause the battery to heat up or cause an explosion resulting in personal injury.
- Do not disassemble or modify the battery, the battery contains safety and protection devices which, if they become damaged, can cause the battery to overheat, or cause an ignition or explosion.
- If there is a leak from the battery and fluid gets into your eyes, do not rub your eyes, flush well with water and immediately seek medical attention.
- Do not drill holes in the battery, hit the battery with a hammer, step on it, or subject it to strong impacts or shocks.
- Do not put the battery in or near fire, into direct sunlight, or other high-temperature locations.
- Always charge the battery in the temperature range of 0 to 50°C (32 to 122°F). If you charge the battery outside of this temperature range, it can cause the battery to become hot or to malfunction and it can also decrease the performance or life cycle of the battery.
- Do not permit the battery to get wet.
- Clean the case with a damp cloth and a mild soap solution. Do not use abrasives, isopropyl alcohol, or solvents to clean the case, lens, or screen. Be careful when you clean the infrared lens. Do not clean the lens too vigorously as this can damage the anti-reflective coating.
- Do not expose the camera to sudden temperature changes (e.g., from cold to hot), as this can lead to internal condensation. To protect your camera, you should power it off and wait long enough until the camera has become warm enough for the condensation to evaporate.
- If you do not use the camera, store it in a cool and dry environment. Remove the battery from the camera and store it separately to prevent unintended battery discharge.

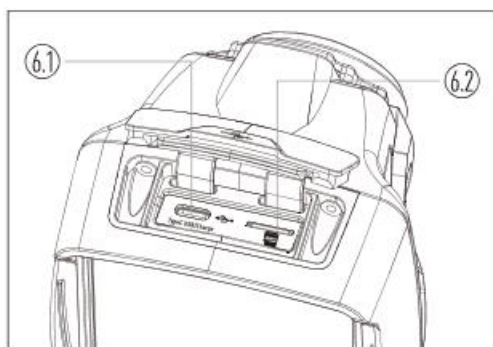
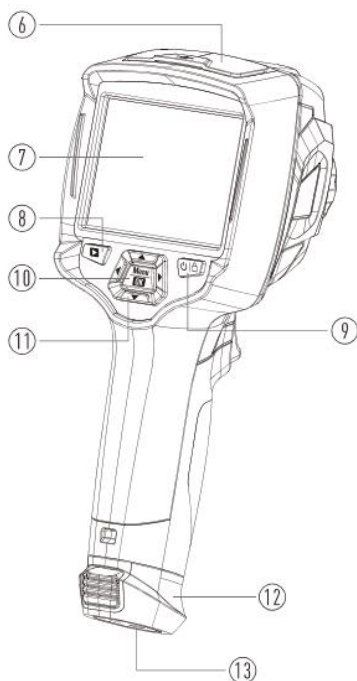
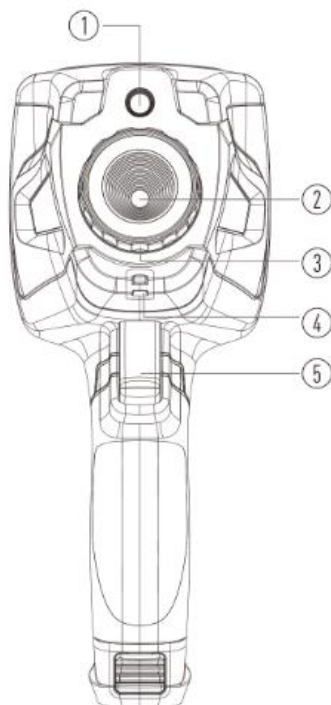
### 3. Specifications

| Imaging and Optical Data                   |   |
|--|---|
| Field of View (FOV)/Minimum Focus Distance | 41.5°x 31.1°/0.5m   |
| Spatial Resolution (IFOV)                  | 1.89mrad  |
| Thermal Sensitivity/NETD                   | <0.05°C at 30°C (86°F)/50mK   |
| Image Frequency                            | 9Hz   |
| Focus Mode                                 | Manual  |
| Zoom                                       | 1-16x continuous, digital zoom  |
| Focal Length                               | 9mm   |
| Focal Plane Array (FPA)/Spectral Response  | Uncooled microbolometer/8-14μm  |
| IR Resolution                              | 384 x 288 pixels  |
| Image Presentation                         |   |
| Display                                    | 3.5 in. LCD, 640 x 480 pixels. Touch Screen   |
| Image Modes                                | IR image, Visual image, Picture in Picture, Auto fusion   |
| Color Palettes                             | Iron, Rainbow, White hot, Black hot, Brown hot, Blue red, Hot cold, Feather                     |
| Measurement                                |   |
| Object Temperature Range                   | -20 to 650°C (-4 to 1202°F)   |
| Accuracy                                   | ±2°C (3.6°F) or ±2% of reading (Environmental temperature 10 to 35°C, object temperature > 0°C) |
| Measurement Analysis                       |   |
| Spot                                       | Center Spot, Three manual spots   |
| Automatic Hot/Cold detection               | Auto hot or cold markers  |
| Measurement Corrections                    | Emissivity (adjustable 0.01-1.0), Reflected Temperature   |
| Line                                       | Two-line analysis   |
| Area                                       | Three area analysis   |
| Storage of Videos                          |   |
| Storage Media                              | 8GB microSD card and 3.4GB internal EMMC  |
| Video Storage Format                       | Standard MPG, 320 x 240 at 30fps, on microSD card >30minutes                                    |
| Video Storage Mode                         | IR/visual images; simultaneous storage of IR and visual videos                                  |

|                                      |   |
|--------------------------------------|---|
| <b>Storage of Images</b>             |   |
| Image Storage Format                 | Standard JPEG or HIR files including measurement data, on the microSD card >6000 images |
| Image Storage Mode                   | IR/visual images; simultaneous storage of IR and visual images                          |
| Image Analysis                       | Internal image analysis tools, Complete function  |
| <b>Set-Up</b>                        |   |
| Set-Up Commands                      | Local adaptation of units, language, date and time formats, information of camera       |
| Languages                            | 12 language options   |
| <b>Digital Camera</b>                |   |
| Built-in Digital Camera              | 2 Megapixels  |
| Built-in Digital Lens Data           | FOV 65°   |
| <b>Data Communication Interfaces</b> |   |
| Interfaces                           | USB Type-C  |
| Wi-Fi                                | 802.11, transfer images and real time video stream                                      |
| USB                                  | Data transfer between camera and PC   |
|                                      | Live video between camera and PC  |
| <b>Power System</b>                  |   |
| Battery                              | Li-ion battery, 4 hours operating time  |
| Input Voltage                        | DC 5V   |
| Charging System                      | In camera (AC adapter)  |
| Power Management                     | Auto Power Off with options 5, 10, 15, 30 min or OFF                                    |
| <b>Environmental Data</b>            |   |
| Operating Temperature Range          | -15 to 50°C (5 to 122°F)  |
| Storage Temperature Range            | -40 to 70°C (-40 to 158°F)  |
| Humidity (Operating and Storage)     | 10% to 90%  |
| Drop Test                            | 2m  |
| Bump                                 | 25g (IEC60068-2-29)   |
| Vibration                            | 2g (IEC60068-2-6)   |
| <b>Physical Data</b>                 |   |
| Camera Weight, incl. Battery         | 1.1lbs (500g)   |
| Camera Size (L x W x H)              | 9.6 x 3 x 3.7" (244 x 77 x 96mm)  |


## 4. Description

|                             |                               |
|-----------------------------|-------------------------------|
| 1. Visual Camera            | 8. Image Browse Button        |
| 2. Infrared Camera Lens     | 9. Power/Lock Button          |
| 3. Focus Ring               | 10. Menu/Select Button        |
| 4. Dust Cover Lanyard Hole  | 11. Up/Down/Right/Left Button |
| 5. Trigger                  | 12. Battery                   |
| 6. Interface and Cover      | 13. Tripod Mount              |
| 6.1 USB Type-C Charger      |                               |
| 6.2 MicroSD Card Slot       |                               |
| 7. LCD Display/Touch Screen |                               |



## 5. Before You Start

### 5-1. How to Charge the Battery

- Before you use the camera for the first time, charge the battery for about three and a half hours. The battery status is shown on the six-segment charge indicator.
- Charge the battery as follows:
  1. Connect the cable to USB-C input on the camera and USB-A end to a power adapter. The charging indicator will be visible on the display while the battery charges.
  2. Charge until the charge indicator changes to “”
  3. Disconnect from AC power when the battery is fully charged.

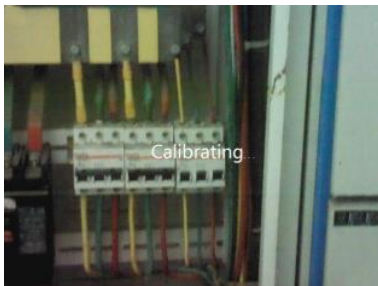
**Note:** Make sure that the camera is near room temperature before you connect it to the charger. Do not charge in unusually hot or cold areas. When you charge in extreme temperatures, battery capacity may decrease.

### 5-2. Power On

To turn the camera on, push and hold the **Power/Lock** “ ” button.



**Note:** After you power on your camera, it needs sufficient warm-up time for the most accurate temperature measurements and best image quality. The visible image will appear first, and the thermal sensor will calibrate internally for several seconds and then the thermal image will also be displayed on the screen.





### 5-3. Power Off

When the camera is turned on, push and hold the **Power/Lock** “” button for two seconds and it will turn off.

### 5-4. Display Elements

- 1 Temperature units
- 2 Distance units
- 3 Emissivity
- 4 Digital Zoom
- 5 MicroSD card
- 6 Wi-Fi
- 7 Battery capacity status
- 8 Time
- 9 Menu
- 10 Center Temperature
- 11 Video recording indicator
- 12 Mode Indicator
- 13 MAX temperature of current scene
- 14 Center Point
- 15 x
- 16 x
- 17 Mode (Auto, Histogram, Manual)
- 18 MIN temperature of current scene
- 19 Color Bar



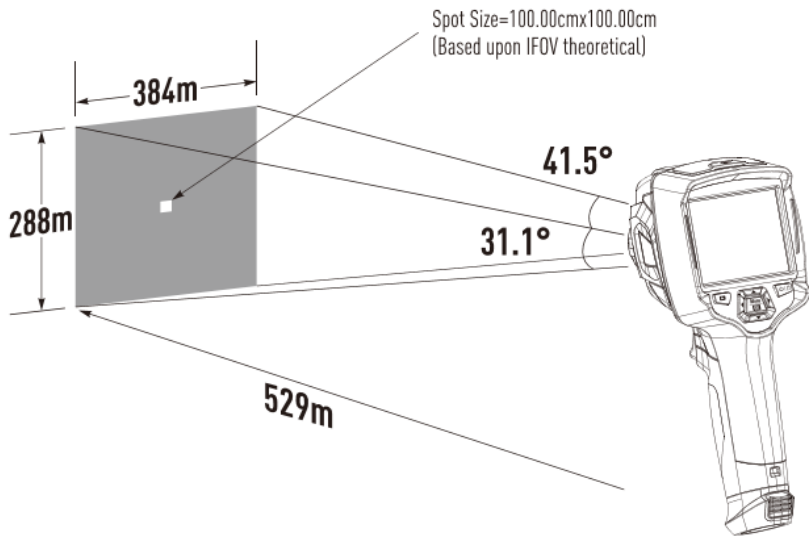
### 5-5. Lens

- **FOV** (Field of View) is the largest area that the imager can see at a set distance.
- This table lists the horizontal FOV, vertical FOV and IFOV for the lens.

| Focal Length | Horizontal FOV | Vertical FOV | IFOV     |
|--------------|----------------|--------------|----------|
| 9mm          | 41.5°          | 31.1°        | 1.89mrad |

- **IFOV** (Instantaneous Field of View) is the smallest detail within the FOV that can be detected or seen at a set distance, the unit is mrad. The formula is **IFOV = (Pixel Size) / (Lens focal length)**
- **D:S theoretical** (=1/FOV theoretical) is the calculated spot size based on the pixel size of the camera detector array and lens focal length.

**Example:** If the camera uses a 9mm lens, because the Pixel Size of the detector is 17μm, Horizontal FOV is 41.5°, Vertical FOV is 31.1°, the IFOV is 17μm/9mm = 1.89mrad; D:S theoretical (=1/IFOV theoretical) = 529:1.



- D:S measure ( $=1/\text{IFOV measure}$ ) is the spot size needed to provide an accurate temperature measurement.
- Typically, D:S measure is 2 to 3 times smaller than D:S theoretical, which means the temperature measurement area of the target needs to be 2 to 3 times larger than that determined by the calculated theoretical D:S.

**NOTE:** IFOV theoretical represents the smallest objects that the camera can detect or see. IFOV measure represents the smallest object form in which an accurate temperature can be measured by the camera.

## 5-6. Focus

- To adjust the focus, rotate the IR Lens clockwise or counterclockwise to get a sharp image.



## 5-7. Shutter

- The thermal image becomes blurry when the camera is not properly correcting after a few minutes or if you change to a different target. An automatic correction will be made to improve the image quality.

- This camera has two modes for correcting: Manual and Auto mode.
- In Manual Mode, long press the down arrow button, to initiate a correction.
- In Auto Mode, the camera can correct automatically. In auto mode, the thermal image initially appears blurry before adjusting to a sharp, clear view.

### **5-8. Temperature Measurement**

- All objects radiate infrared energy, the quantity of energy radiated is based on the actual surface temperature and the surface emissivity of the object. The camera senses the infrared energy from the surface of the object and uses this data to calculate an estimated temperature value.
- Many common objects and materials such as painted metal, wood, water, skin and cloth are very good at radiating energy, and it is easy to get relatively accurate measurements, for surfaces that are good at radiating energy (high emissivity), the emissivity factor is  $>0.90$ .
- This simplification does not work on shiny surfaces or unpainted metals as they have an emissivity of  $<0.6$ , these materials are not good at radiating energy and are classified as low emissivity.
- To more accurately measure materials with low emissivity, emissivity correction is necessary. Adjustments to the emissivity setting will usually allow the camera to calculate a more accurate estimate of the actual temperature.

### **5-9. Emissivity Adjustment**

- Emissivity of the surface can significantly influence the apparent temperatures that the camera observes. Using the correct emissivity value is important to make the most accurate temperature measurements.
- Understanding the emissivity of a surface can help you obtain more accurate temperature measurements, although this may not always be the case.

**Note:** Surfaces with an emissivity of  $<0.60$  make reliable and consistent determination of actual temperature problematic, the lower the emissivity, the more potential errors are associated with the camera's temperature measurement calculations. This is also true even when adjustments to the emissivity are performed properly.

- Emissivity is set directly as a value or from a list of the emissivity values for some common materials, the emissivity displays on the LCD Screen as  $E=x.xx$ .
- The following table gives typical emissivity of important materials.

| Material        | Emissivity |
|-----------------|------------|
| Water           | 0.96       |
| Stainless steel | 0.14       |
| Aluminum plate  | 0.09       |
| Asphalt         | 0.96       |
| Concrete        | 0.97       |
| Cast iron       | 0.81       |
| Rubber          | 0.95       |
| Wood            | 0.85       |
| Brick           | 0.75       |

| Material        | Emissivity |
|-----------------|------------|
| Tape            | 0.96       |
| Brass plate     | 0.06       |
| Human skin      | 0.98       |
| PVC plastic     | 0.93       |
| Polycarbonate   | 0.80       |
| Oxidized copper | 0.78       |
| Rust            | 0.80       |
| Paint           | 0.90       |
| Soil            | 0.93       |

## 5-10. Reflected Temperature

- Using the offset factor, the reflection is calculated out due to the low emissivity and the accuracy of the temperature measurement is enhanced.

In most cases, the reflected temperature is the same as the ambient air temperature. Only when high emission objects with significantly higher temperatures are near the measured object should the reflected temperature be determined and applied. For objects with high emissivity, the reflected temperature has minimal impact.

- The reflected temperature can be set individually. Follow these steps to get the right value for the reflected temperature.
  1. Set the emissivity to 1.0.
  2. Adjust the optical lens to near focus.
  3. Looking in the opposite direction away from the object, take a measurement and freeze the image.
  4. Determine the average value of the image and use that value for your input of the reflected temperature.







## 6. Menus

The menus allow you to access images, measurements, emissivity, color palettes, temperature measurement range, review images and video, and access settings.

## 6-1. Main Menu

- Press the **Menu/OK** button or touch the screen to enter the MAIN Menu mode, this is the main interface of the camera's menus.
- It contains the **Alarm**, **Parameters**, **Measurement**, **Image Mode**, **Palette** and **Setting**



|  |            |  |
|--|------------|--|
|   | Alarm      | Settings for High and Low Temperature Alarms   |
|   | Parameters | Parameters used for temperature calculation  |
|   | Measure    | Tools used for the calculation and display of radiometric temperature measurement data related to the thermal images                                 |
|   | Image Mode | Set image source for the display on the camera's LCD. It contains five items such as infrared image, visual image and Auto fusion.                   |
|   | Palette    | Includes restoring factory settings and formatting storage settings.   |
|  | Setting    | Set for the user preferences such as language, unit of temperature measurement, date, time. restore factory setting and display product information. |

## 6-2. Image Mode

- In the main menu, touch the  to switch between image modes.
- We offer five image modes to choose from:  
**IR:** Displays only infrared image



**Picture-in-Picture:** The thermal image is overlaid in the center of the screen on top of a normal visible light image.



**Camera:** Displays only the visible image



**AUF:** Auto Fusion mode, compare the center area temperature with full screen, the camera will calculate the mix ratio of infrared and visual images automatically.



### Zoom Mode:

In Zoom Mode, the live thermal image can be digitally magnified up to 32× for closer inspection.

Use the Left Key or drag the Zoom Bar to zoom in.

Use the Right Key or drag the Zoom Bar back to zoom out.



Zoom is for live viewing only. Saved images and recordings will always be stored in the standard field of view.











### 6-3. Image Palette

- The Image Palette lets you change the false-color presentation of infrared images on display or on captured images.
- A variety of palettes are available for specific applications.
- The standard palettes offer an equal, linear presentation of colors that allow for the best presentation of detail.

#### Standard Palette

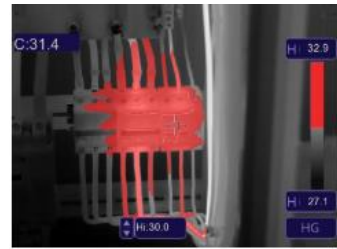
1. In main menu, press **“Palette”** icon button, highlight **“Palette”**.
2. Press **“Up”** Button, popup Image submenu which contains 8 kinds of color palettes and 4 kinds of special palettes.
3. Press **“Left”** or **“Right”** Button or touch the image mode icons, highlight the palette of your choice.
4. The palette mode will be changed after you select it.



|   |           |   |           |
|---|-----------|---|-----------|
|  | Iron      |  | Brown hot |
|  | Rainbow   |  | Blue red  |
|  | White hot |  | Hot cold  |
|  | Black hot |  | Feather   |

### High Alarm

- If the temperature is “higher” than the set high alarm value, then the image will be colored RED.



### Low Alarm

- If the temperature is “lower” than the set high low value, then the image will be colored BLUE.



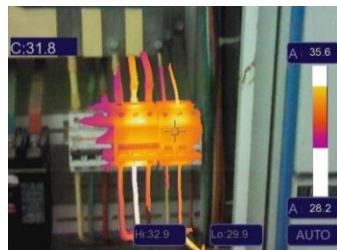
### Zone Alarm

- If the temperature is between the high alarm and the low alarm set value, the image will be colored yellow.



### Visible Zone

- The temperature between the high alarm and the low alarm set values will be colored to the palette, other parts of the image will display as visible image.





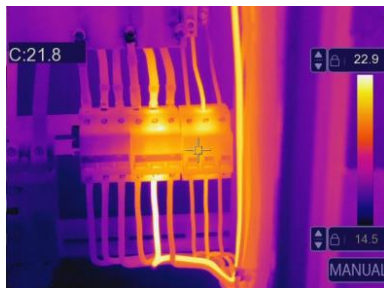


## 6-4. Image Adjustment

There are three modes for image adjustments: Auto, Histogram and Manual.

### 6-4-1. Lock Operation

- Press the “Power/Lock” “ ” Button to lock the current scene temperature range, “ ” means Manual.
- After the current scene temperature is locked, pressing the **up or down arrow** button allows you to adjust the Max Temp value up or down. Pressing the left or right arrow button allows you to adjust both Max and Min Temps simultaneously, to dial into the temperature of interest.
- To adjust only the Min Temp value, touch the Min Temp box on the screen and use the left/right arrows.



### 6-4-2. Histogram Mode and Auto Mode

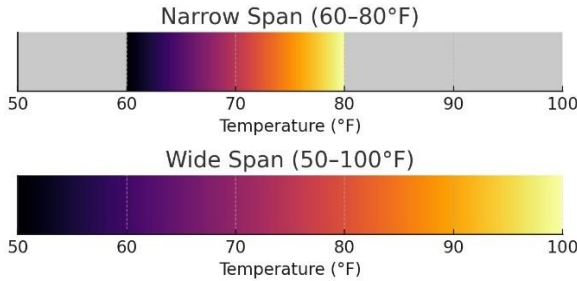
- **Histogram Mode:** The thermal image is enhanced by the histogram algorithm. The relationship between temperature and color is not linear, some parts of the image are enhanced in Histogram Mode.
- **Auto Mode:** Level sets the middle point of the temperature scale and span sets how wide that span is. A narrow span makes small temperature differences easier to see, while a wide span shows a bigger range but with less detail.
- Touch the icon “HG” or “AUTO” below the color bar to change the mode.



**Manually adjusting Level and Span while in Auto or HG Mode:** The “A” or “H” icon next to the Min and Max temperature will change to a lock icon. If you want to set the Max or the Min Long press the up arrow to enter the Max Temp Setting. Now use the up or down arrow to select the

desired Maximum temperature. Then press the Power/Lock button to resume normal operation. If you want to adjust the Minimum temperature you long press the down arrow button to enter the Min Temp Setting. Now use the up or down arrows to set the desired minimum temperature value. Then press the Power/Lock button to resume normal operation.

**Example:** When checking cables and connectors inside an electrical panel, set the level close to the normal temperature of the wiring; using a narrow span will make a loose or overloaded connector that is running hotter than the rest stand out clearly.



## 6-5. Measurement Menu

Press the **^ Up** or **∨ Down** button to select year, month, and day, then press the **MENU/OK** or the **Right** button to change the Time/Date.

1. In main menu, press “**Measurement**” icon button, highlight “**Measurement**”.
2. Press “**Up**” button, popup Image submenu which contains 5 kinds of Measurement tools.
3. Press “**Left**” or “**Right**” button, or touch the Measurement tools icons, highlight the Measurement tool which you want to choose.
4. The Measurement tool will be enabled after you select it.

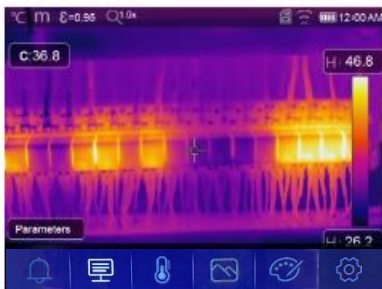


- Center Spot:** Measure the center point temperature.
- Manual Spot:** Measure the manual point temperature, There are three manual analyse points.
- Line Analysis:** Measure the line temperature, There are two analysis lines, One for horizontal, the other is vertical line.
- Area Analysis:** Measure the area temperature, There are three analysis areas.
- Hi/Lo Spot Analysis:** Capture max/minimum temperature.
- Delete all Analysis:** Delete all analyze tools.

## 6-6. Parameter Menu

In main menu, press “Up” and “Down” button, highlight “Emiss”, press “Select” button, popup object parameter submenu.

6-6-1



### 6-6-1. Ambient Temperature Compensation

- Ambient Temperature will affect the measurement of the camera. This camera has an Ambient Temperature Compensation feature, which allows you to adjust the temperature from 0°C to 50°C or 14° F to 122°F.



### 6-6-2. Reflective Temperature

- In reflective temperature submenu, press the “◀” and “▶” arrow to change the temperature values.
- Reflective temperature is important for radiometric temperature measurements. This thermal imager has temperature compensation for reflective temperatures. To obtain a more accurate temperature measurement, ensure the reflective temperature is set correctly.
- In most cases, the reflected temperature is identical to the ambient temperature, only when objects with strong emissions with much higher temperature are in the proximity of the object being measured, the reflected temperature must be set.



### 6-6-3. Atmospheric Humidity

Water droplets in the air can absorb infrared rays. The wet air can affect the temperature accuracy of the measurement. This thermal imager has a feature to compensate for humidity and can be set from 10% to 100% humidity.

### 6-6-4. Infrared Compensation

This feature allows correcting the temperature measurement for external factors that affect infrared radiation readings.



### 6-6-5. Distance

The accuracy and clarity of a thermal image decreases with distance, as objects farther away appear smaller and may emit less distinguishable thermal radiation, potentially affecting temperature readings and detail resolution.

- The distance can be set from 0 to 610 meters (0 to 2000ft).



### 6-6-6. Emissivity

- In the emissivity submenu, press the “◀” and “▶” arrow to change the emissivity values.
- The emissivity ranges from 0.01 to 1.00.



## 7. Setting Menu

- In the main menu, press the “**Setting**” icon button, highlight “**Setting**” and the Setting menu will display.

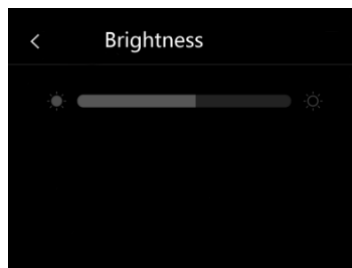




## 7-1. Device Setting

There are multiple pages in Device setting, use “” icon to go to next page, or use “” to go to previous page

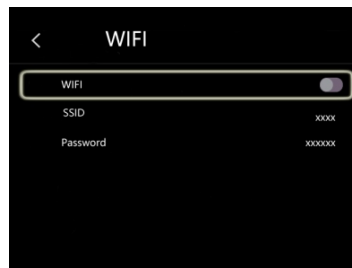


**7-1-1. Brightness:** Drag the slider bar to adjust the LCD brightness.

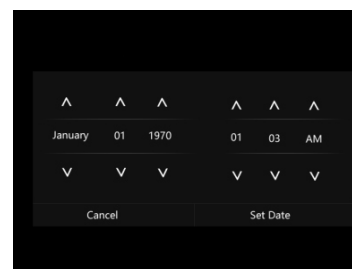


**7-1-2. Wi-Fi:** Press “” → “” to turn on the Wi-Fi. The Wi-Fi works in access mode, so it needs the SSID and Password to allow another device to connect to it.

- The default SSID is “xxxx”, the default password is “12345678”



**7-1-3. Time/Date:** Press “” or “” to change time/date, then press “**Set Date**” to save the change, or press “**Cancel**” to quit:



**7-1-4. Language:** Press “Up/Down” Button to select language and use “MENU/OK” Button to set selected language to be valid.

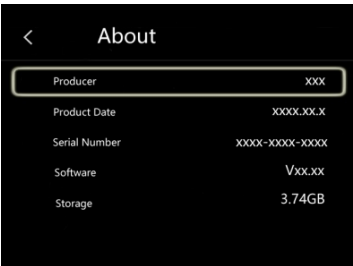


**7-1-5. Auto Power Off**

- There are four options in auto power off menu, as follows: “OFF”, “5Min”, “10Min”, “15Min”, “30Min”.
- Pressing the touch screen or keyboard, turns off the Auto Power Off timer and it will be cleared and re-timed.

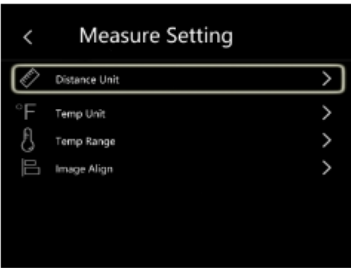


**7-1-6. About (Info):** The info menu contains all the product information, such as: Producer, Product Date, Serial Number, Software Version, and Storage.



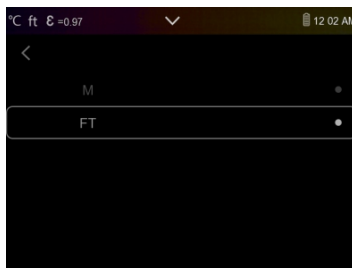
**8. Measure Setting**

- Select the “Measure Setting” menu, the Measure Setting menu will be displayed.
- There are four options in the Measure setting menu, shown below:



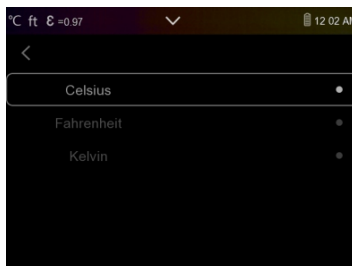
## Distance Unit

- Change the distance unit between “m” meters and “ft” feet
- $1(\text{ft})=0.3048(\text{m})$ ;  $1(\text{m})=3.2808399(\text{ft})$ .



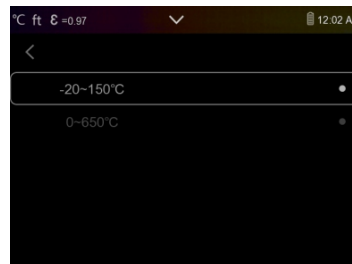
## Temperature Unit

- Choose from three temperature unit types: °C, °F and K.
- Conversion relationship:  $^{\circ}\text{F}=1.8 \times ^{\circ}\text{C}+32$ ,  $\text{K}=273.15+^{\circ}\text{C}$



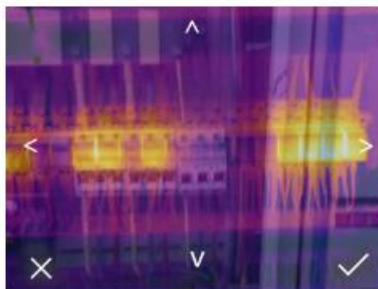
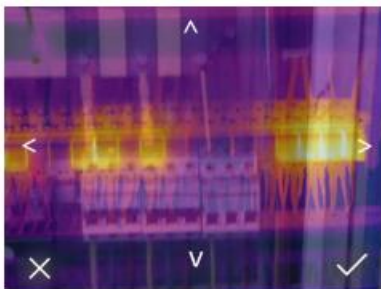
## Temperature Range

- You can select from two temperature ranges: “-20 to 150°C” and “0 to 650°C”
- If you are not sure, select “-20 to 150°C”.

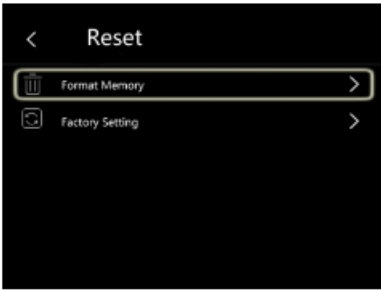


## Image Align

Press “< > ^ v” to adjust the position of the visual and infrared images.

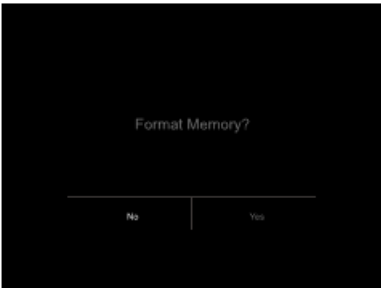


Reset

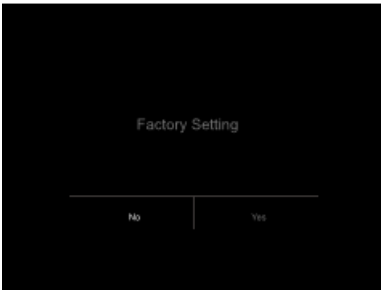


Format Memory

Format Memory operation will format all the Picture Gallery; the device settings are not affected.



Factory Setting



Factory Settings of the camera are as follows:

| Item                   | Parameter               | Value    |
|------------------------|-------------------------|----------|
| Measurement            | Center Spot Measurement | Off      |
|                        | Hot Spot Measurement    | Off      |
|                        | Cold Spot Measurement   | Off      |
| Measurement Parameters | Emissivity              | 0.95     |
|                        | Reflective Temperature  | 25       |
| Image                  | Mode                    | Infrared |
|                        | Palette                 | Iron     |
|                        | Adjustment              | Auto     |
| System Setting         | Language                | English  |
|                        | HDMI Output             | Off      |
|                        | Laser                   | Off      |
|                        | Lamp                    | Off      |



## 8-1. Camera Menu

- The camera has photo and video functions.
- In photo function, the camera can save thousands of images.
- Image resolution is 1280x960 in “.jpg” format and infrared and visible data are stored in the image.
- In video function, the camera can save hours of video in “.mp4” format; both visible data and infrared data are stored.

**Note:** Images and video files are stored on the microSD card. Images can easily be read and analyzed within the InfraRead PC software and/or InfraRead App.

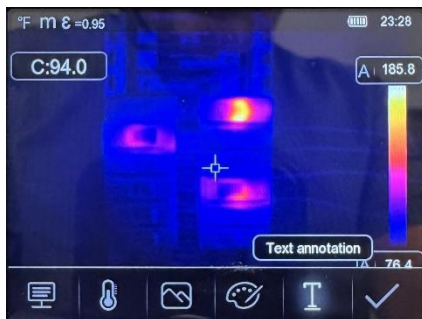
### 8-1-1. Save Image

- 1.Press the Trigger button to capture and freeze an image. The Save menu will appear on the display.
- 2.Press “MENU/OK” key to save image, and the image will flash for a second. After the image is saved, the camera will return to operating mode.



### 8-1-2. Add Text Note

Touching the “Text information” icon will give you the option to enter text information onto the picture. The picture and text information are stored together. When opened in the gallery, software, or App, the text information will display with the picture.



### 8-1-3. Change Measure Parameters

Touch the “Parameters” icon, to change the image's measurement parameters: Emissivity, ambient temperature, humidity, reflect temperature, infrared compensation, and distance.



## 8-1-4. Analysis Tools

Touch the **“Measurement”** icon, to add or change the analysis tools in the image: point analysis, area analysis, line analysis.



## 8-1-5. Change Image Mode

Touch the **“Image Mode”** icon, it can change the image mode: thermal, visible, picture in picture, Auto fusion, zoom.



## 8-1-6. Change Color Palette

Touch the **“Palette”** icon, it can change the image color.



## 9. Video Menu

The camera has “.mp4” video capture.

1. Press and Hold the Trigger for 2 seconds, and recording will start to capture video.
2. Press and Hold the Trigger for 2 seconds, and recording stops and the video will be saved.




## 9-1. Files Browser

Press the **“Files Browser”** button and the file browser will open and display all the pictures and videos saved on the microSD card.



### 9-1-1. Analyze an Image

- When the current file type is image, press “” to enter image analysis mode.
- Options that can be changed here are the measure parameters, analysis tools, image mode and color on the image.



### 9-1-2. Play a Video

When current file type is a video, press “” to play video.



Play Video



Stop Play Video

### 9-1-3. View Image Info

Press “” to view the image information.

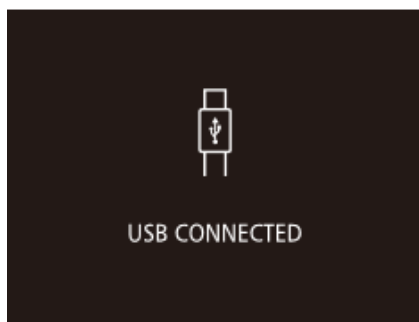
### 9-1-4. Delete a File

Press “” to delete the current file



## 9-2. USB Mode

- Connect the USB cable to the camera and the following menu will pop up:



## 10. Android/iOS App InfraRead

### 10-1. App Install

#### 10-1-1. System Requirements

- Android mobile phone: Android 4.0 and above, with USB OTG Support
- iOS: iPhone 4 and above



**infraREAD**

#### 10-1-2. InfraRead App Install

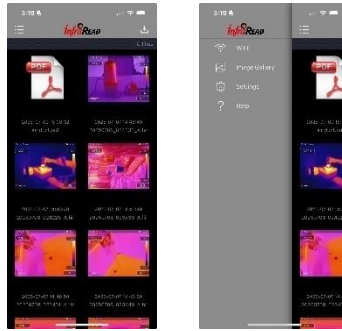
- Android: Search “InfraRead” in Google Play Store and install it.
- iOS: Search “InfraRead” in the App Store and install it.

### 10-2. InfraRead Functions

#### 10-2-1. Import Pictures











- Use the USB cable to download the IR pictures directly from the camera.

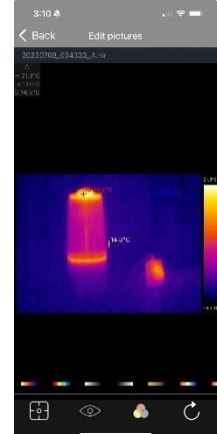
- Copy the IR pictures from PC or SD card.



## 10-2-2. Analyze Images

Select an IR Picture and click “” icon to analyze it.

1. Click “” icon to select image mode, there are four modes for you to select.
  - (1)  IR Mode: only infrared picture displayed.
  - (2)  Visible Mode: only visible picture displayed.
  - (3)  IR Fusion Mode: The infrared picture is fusion with visible picture.
  - (4)  Visible Fusion Mode: full screen fusion, the visible picture is fusion with infrared picture.
2. Color bar Select  
Click “” icon to select the color bar, there are eight color bars to choose from.
3. Analyze  
Click “” icon to analyze the IR pictures with the following three tools.
  -  Point Analyze: Add a point to the picture, it will display the temperature of the point.
  -  Line Analyze: Add a line to the picture, it will display the highest, lowest and average temperature of the line.
  -  Area Analyze: Add a rectangle to the picture, it will display the highest, lowest and average temperature of the rectangle.




### 10-3. Report and Share

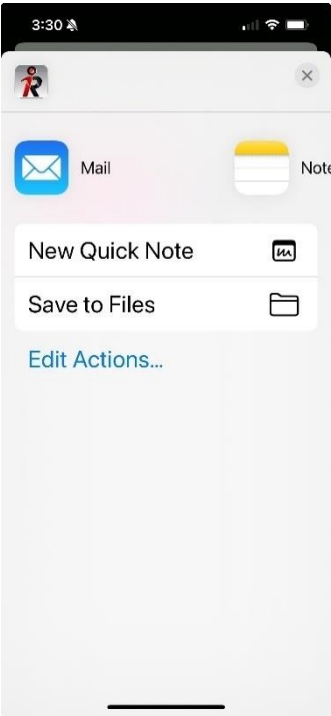
#### 1. Report

Click  to report as a “.pdf” file.



#### 2. Share

Click  to share the infrared picture by email, cloud, message, air drop, etc.



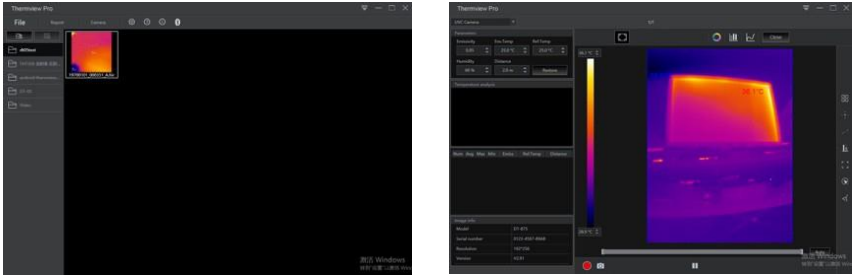
### 11. InfraRead PC Software

#### 11-1. System Requirements

- Windows X or higher with .NET Framework 4.5 installed.

## 11-2. InfraRead Software

- The camera is supplied with free InfraRead software. This Software contains features to analyze images, organize data and information, and make professional reports.
- You can customize the reports and add your company logo and information.
- You can save the reports as .pdf or .xlsx and export it.
- **PC Software:** The device is a USB camera for your computer, if you select this mode, open “InfraRead” and select “**Camera**” menu to display the following pictures:

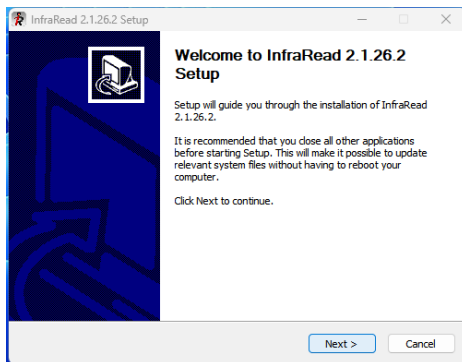


- In the PC software, you can analyze the thermal image in real time, or you can record and analyze the thermal video in real time.

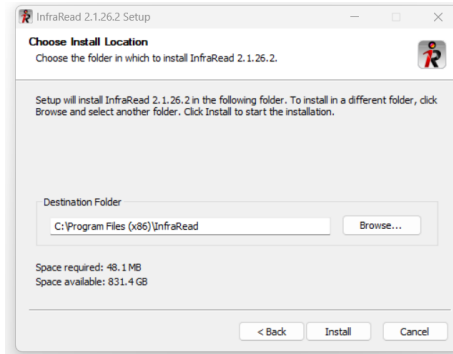
## 11-3. InfraRead Install

**Note:** Please download the latest InfraRead Software from [www.triplett.com/software](http://www.triplett.com/software)

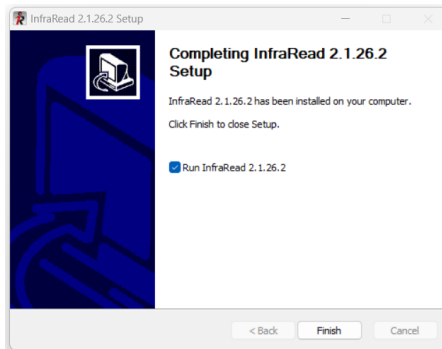
1. Click to run “setup.exe” and follow the prompts to install.



2. Click “Next” to install, until the installation is finished.



3. The Installation was Successful after you click “Finish” as seen below.

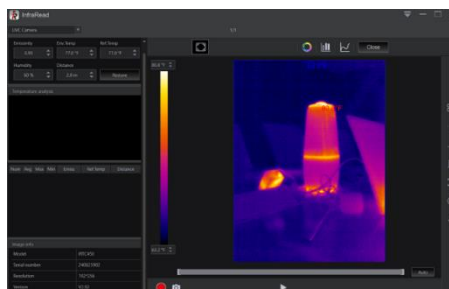


## 11-4. Running

After ensuring the InfraRead software has been installed, click shortcuts on the desktop or start menu to run the software.



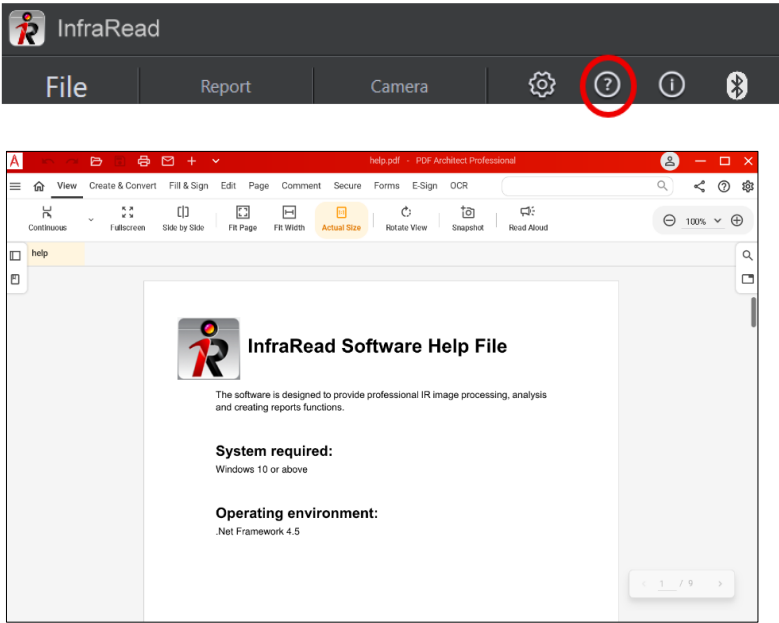
After insuring the InfraRead Software has been installed, click the shortcut on the desktop or start menu to run the software.





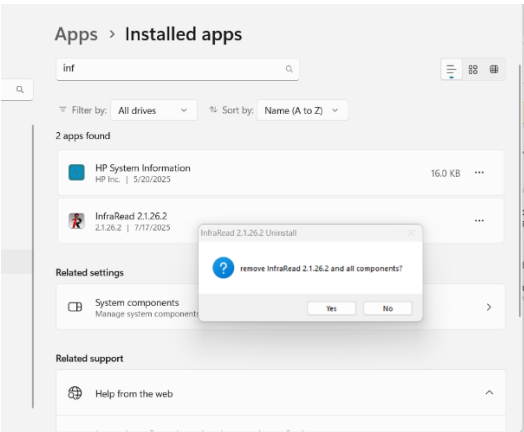
### 11-5. InfraRead Help File

Locate the Software Help Icon in the menu bar. Click on the  icon to open the Software Help File.



### 11-6. InfraRead Uninstall

Uninstall InfraRead by locating it in the Installed apps menu, click “Uninstall” then click “Yes” to finish the uninstall.



## **12. Warranty Statement**

Triplett Test Equipment offers a three-year warranty to the original purchaser of its products. We guarantee that our products will be free from defects in workmanship and materials for three (3) years from the purchase date.

### **This warranty does not cover:**

- Products purchased from unauthorized distributors.
- Items that have been repaired or altered by unauthorized individuals.
- Damage from misuse, abuse, misapplication, negligence, or accidents.
- Products with altered, defaced, or removed serial numbers.
- Accessories, including batteries.

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## This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.