TOOLTOP T7

TOOLTOP T7 Thermal Camera with Macro Lens User Manual

Model: T7

1. Introduction

This manual provides comprehensive instructions for the safe and effective use of your TOOLTOP T7 Thermal Camera with Macro Lens. The T7 is a compact, high-resolution thermal imager designed for mobile devices, offering advanced thermal analysis capabilities for various applications, including solar panel inspection, power device fault detection, and general thermal imaging needs.

2. Key Features

- **High-Resolution Infrared Sensor:** Equipped with a 256 x 192 infrared sensor for excellent imaging detail.
- **Smooth Imaging:** 25Hz high frame rate ensures fluid, lag-free thermal video.
- **Mobile App Integration:** Connects with a dedicated mobile application for photo and video capture, storage, and professional thermal analysis.
- **Advanced Temperature Measurement:** Supports point, line, and rectangular box measurements, including high/low temperature tracking and alarms.
- **Wide Temperature Range:** Measures temperatures from -15°C to 600°C (5°F to 1112°F).
- **Automatic Temperature Tracking:** Features automatic tracking of highest, lowest, and central point temperatures.
- **Optional Macro Lens:** Includes an optional magnetic macro lens for detailed inspection of small components (minimum observable size 2x1mm).
- **Compact and Lightweight:** Dimensions of 25mm x 40mm x 14mm and a net weight of 23g.

Image 1: Overview of TOOLTOP T7 Thermal Camera features, highlighting HD imaging, 25Hz frame rate, 256x192 resolution, and optional macro lens.

3. Package Contents

Please check the package for the following items:

- 1 x TOOLTOP T7 Thermal Imager
- 1 x English User Manual (this document)
- 1 x Cleaning Cloth
- 1 x Storage Box
- 1 x Storage Bag
- 1 x Optional Macro Lens (if purchased with the macro lens variant)

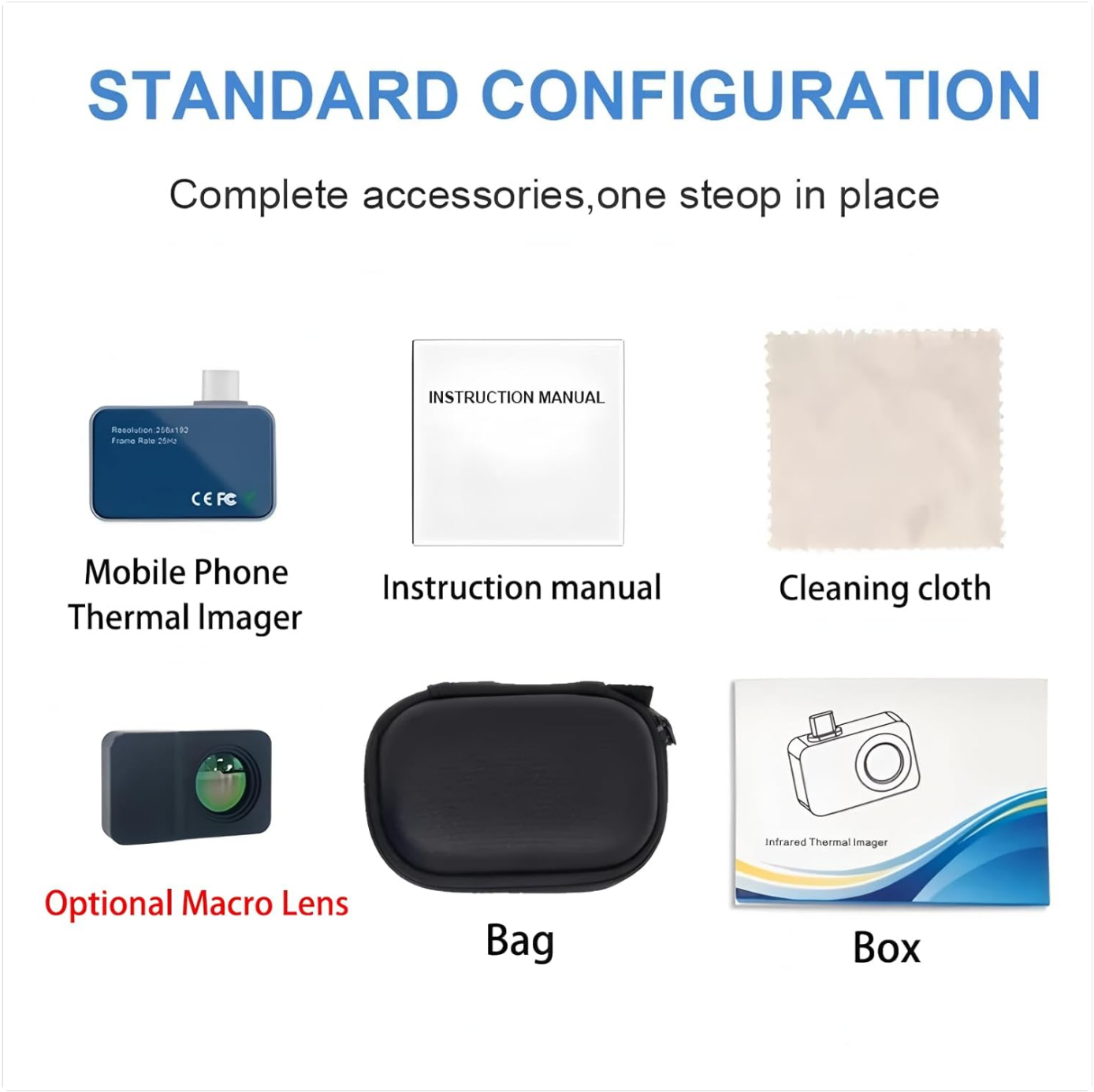

Image 2: Standard configuration of the TOOLTOP T7 Thermal Camera package, showing the thermal imager, instruction manual, cleaning cloth, optional macro lens, storage bag, and box.

4. Setup Guide

1. **Download the Mobile Application:**
   Search for the dedicated thermal imaging application (e.g., "Thermal P2" or similar, refer to product packaging or official website for exact app name) on your mobile device's app store (Google Play Store for Android, Apple App Store for iOS if using a compatible adapter). Install the application.
2. **Connect the Thermal Imager:**
   Plug the TOOLTOP T7 Thermal Imager into your mobile device's USB Type-C port. Ensure a secure connection. For iOS devices, a compatible USB-C to Lightning adapter (not included) may be required if your device does not have a USB-C port.

Image 3: The TOOLTOP T7 Thermal Camera connected to a mobile phone, displaying a thermal image.

3. **Launch the Application:**
   Open the installed thermal imaging application. The application should automatically detect the connected thermal imager and display the thermal view.

4. **Attach Macro Lens (Optional):**
   If you have the optional magnetic macro lens, carefully attach it to the front of the thermal imager's lens for enhanced close-up thermal imaging. This is useful for inspecting very small components.

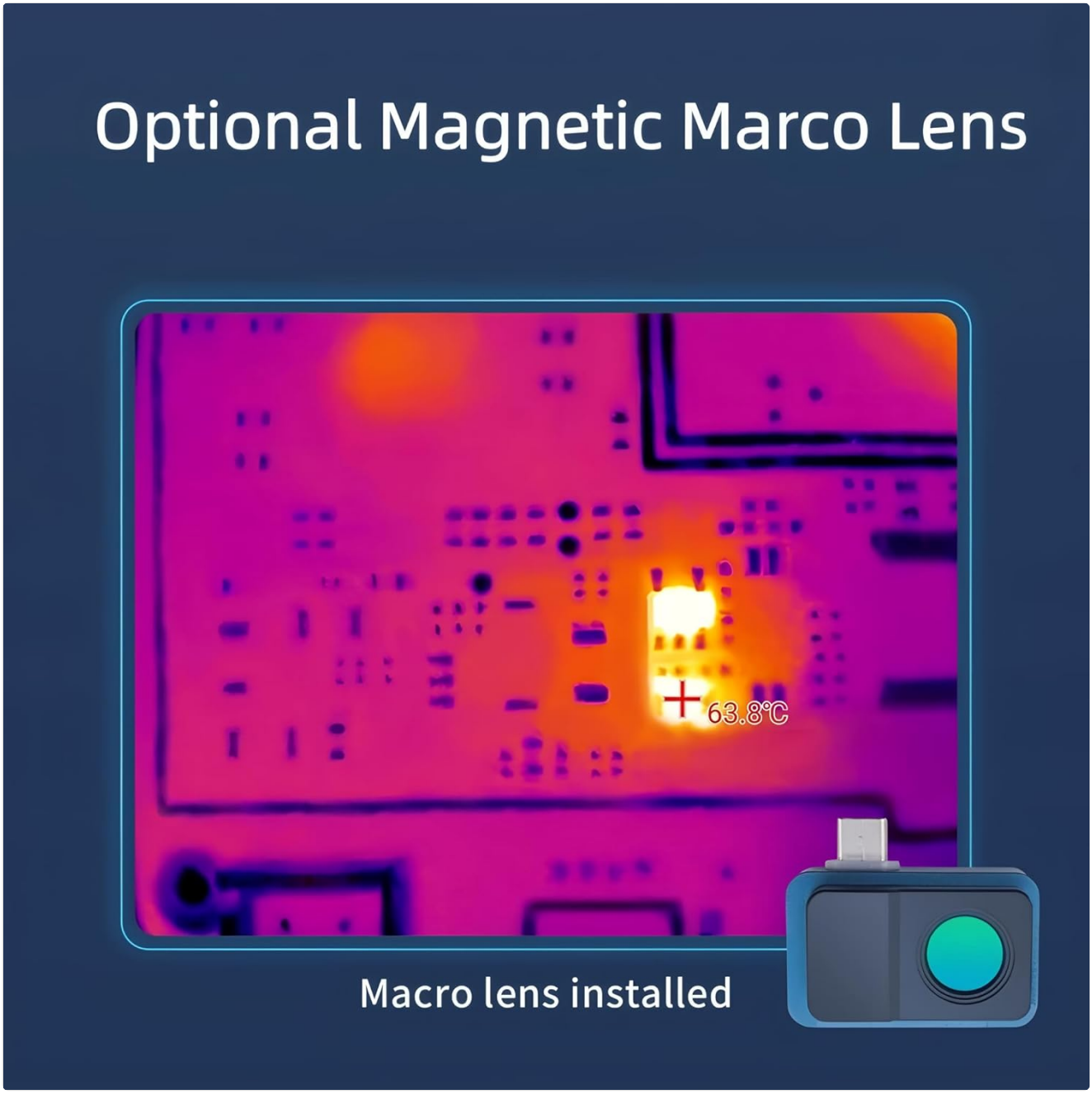

Image 4: The optional magnetic macro lens installed on the TOOLTOP T7 Thermal Camera, showing a detailed thermal view of a circuit board.

5. Operating Instructions

Once the thermal imager is connected and the application is running, you can begin thermal imaging. The application interface will provide various controls and display options.

5.1. Basic Thermal View

The main screen will display the real-time thermal image. Hotter areas will typically appear in brighter colors (e.g., red, yellow), while cooler areas will be darker (e.g., blue, purple), depending on the selected color palette.

5.2. Temperature Measurement

The application supports various temperature measurement modes:

- **Spot Measurement:** Tap on the screen to add individual temperature measurement points.
- **Line Measurement:** Draw a line to measure temperature distribution along a specific path.

- **Area Measurement:** Define a rectangular area to track the highest, lowest, and average temperatures within that region.
- **Automatic Tracking:** The device can automatically track the highest, lowest, and central point temperatures in the entire field of view.

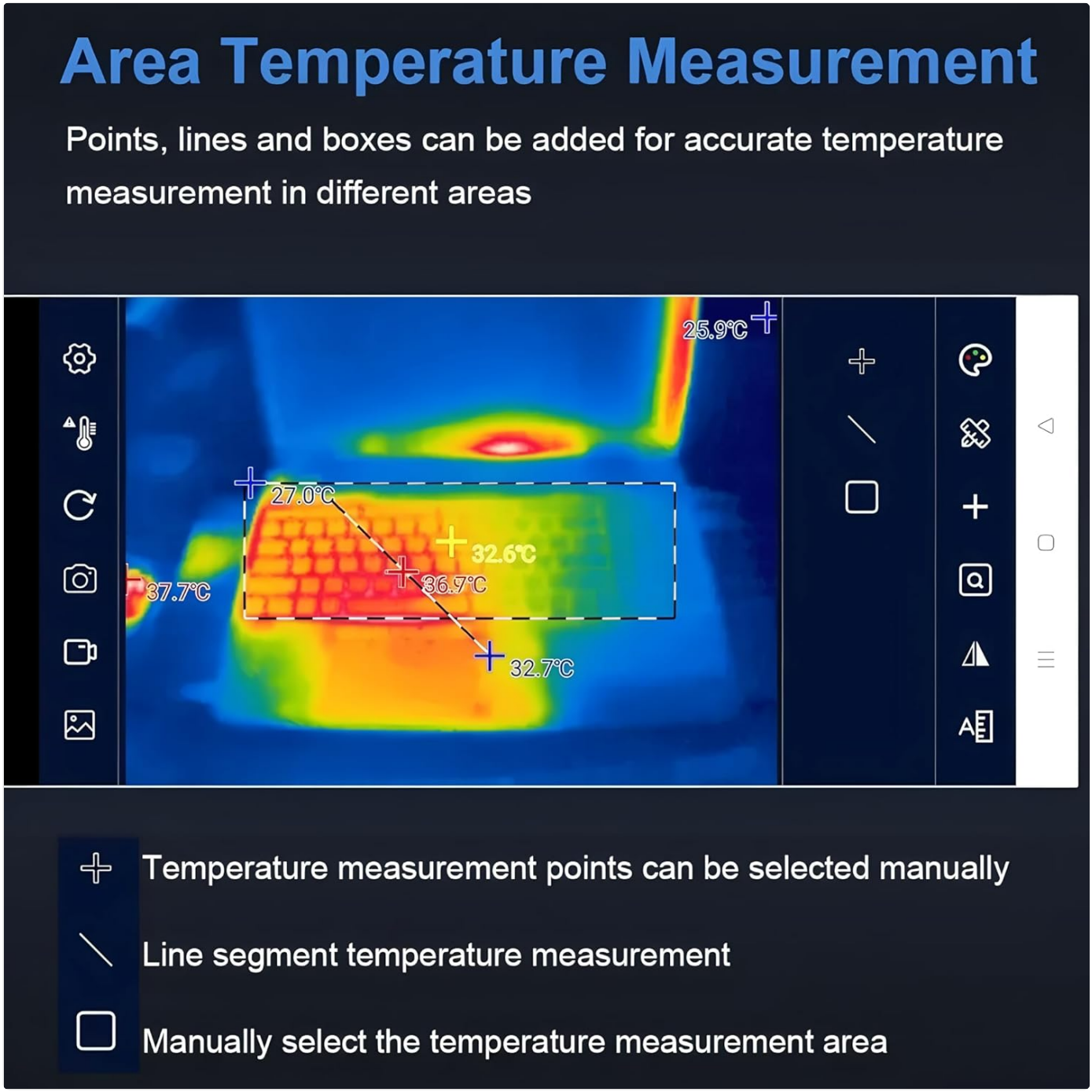

Image 5: The application interface demonstrating area temperature measurement with points, lines, and rectangular boxes on a keyboard.

5.3. Color Palettes

The application offers multiple color palettes to visualize thermal data. You can switch between palettes to highlight different temperature variations or suit specific inspection needs. Common palettes include Iron, White Hot, Black Hot, Rainbow, Red Hot, and Cold Blue.

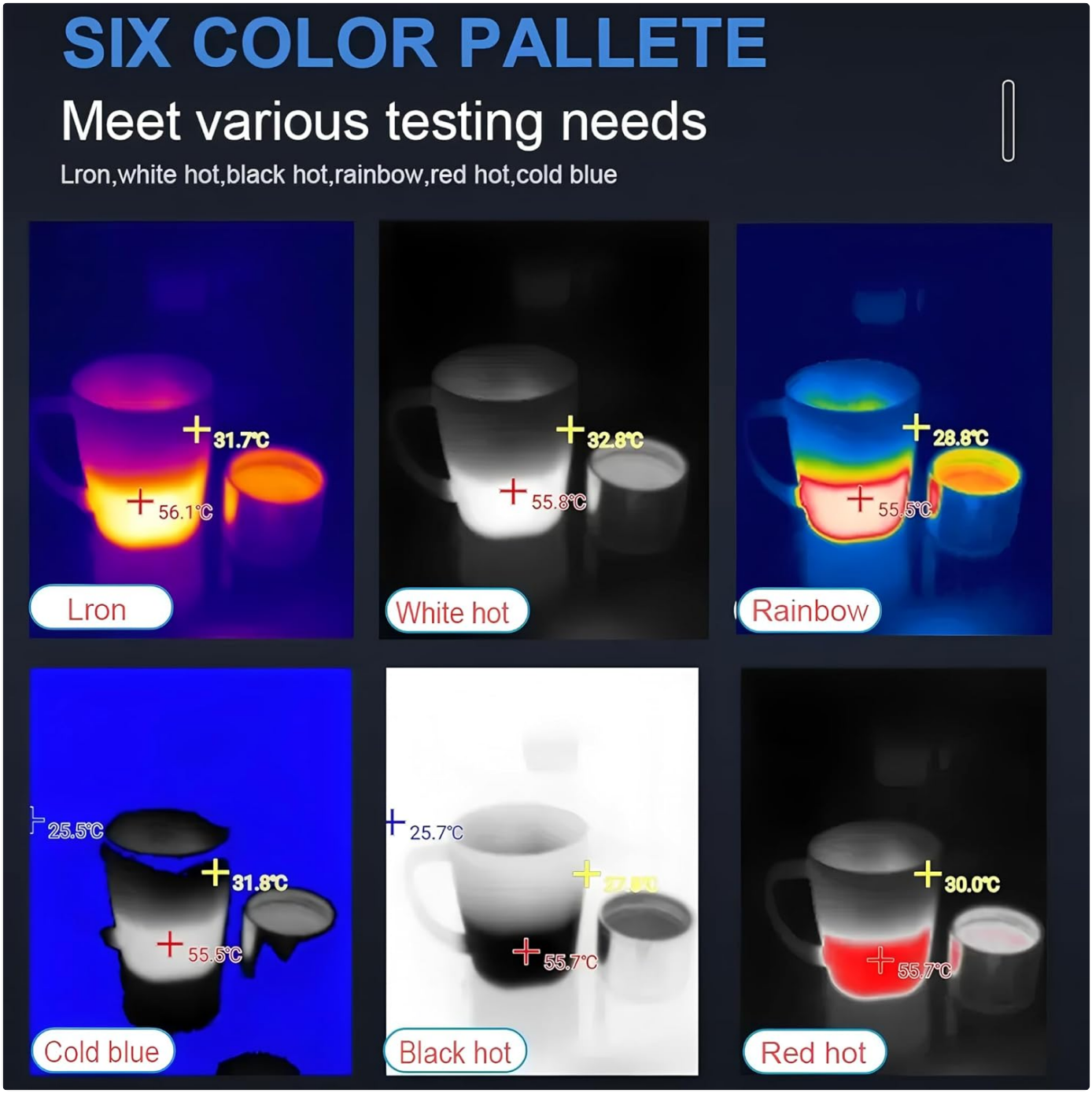

Image 6: Examples of six different color palettes (Iron, White Hot, Rainbow, Cold Blue, Black Hot, Red Hot) available for thermal imaging.

5.4. Photo and Video Capture

Use the dedicated buttons within the application to capture thermal photos or record thermal videos. These files will be stored in your mobile device's photo album for later review and analysis.

5.5. Night Vision Scene

The thermal camera can be used in low-light or no-light conditions, effectively providing a "night vision" capability by detecting heat signatures.

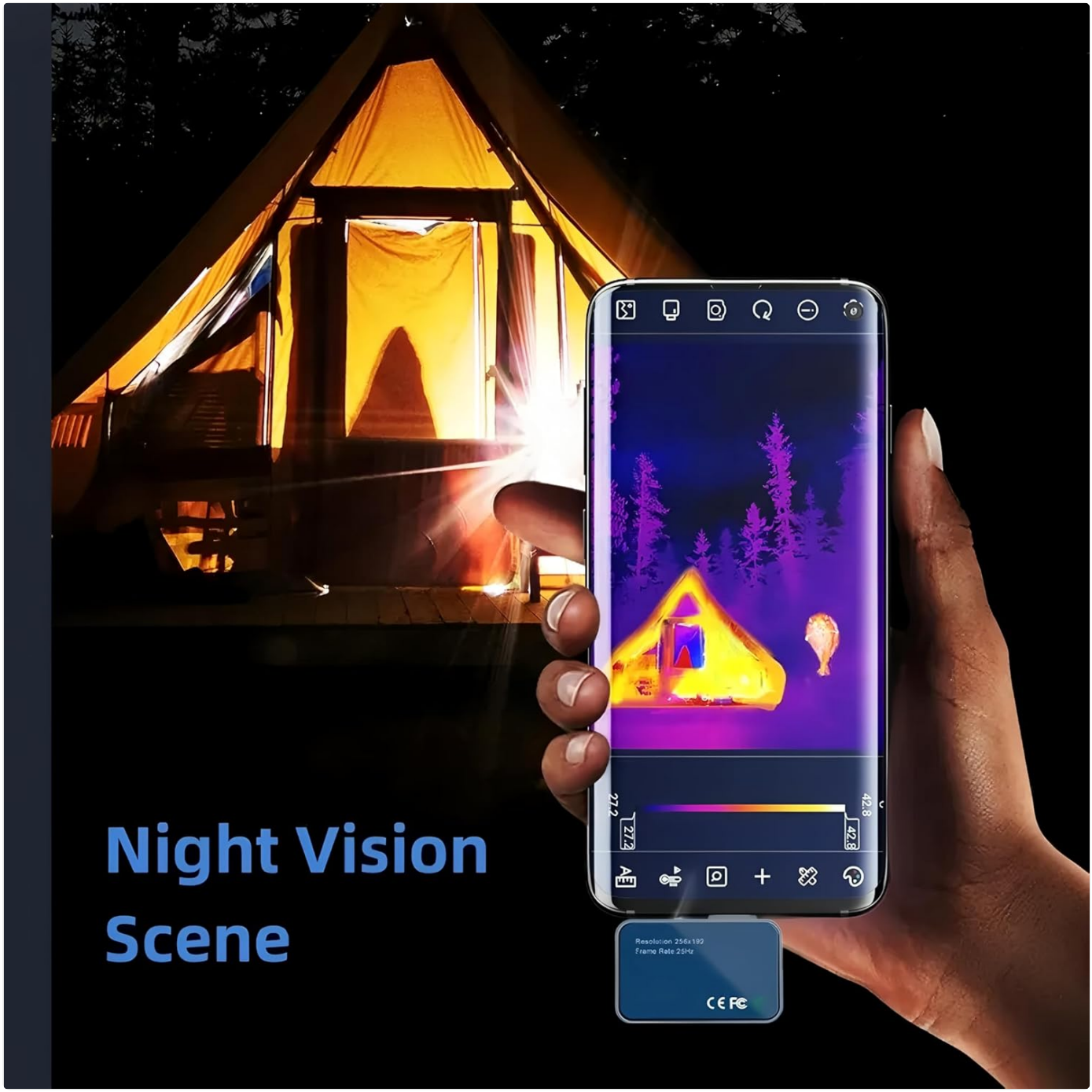

Image 7: A mobile phone displaying a thermal image of a tent at night, illustrating the night vision capability of the thermal camera.

6. Maintenance

- **Cleaning:** Use the provided cleaning cloth or a soft, lint-free cloth to gently wipe the lens and body of the thermal imager. Do not use abrasive materials or harsh chemicals.
- **Storage:** When not in use, store the thermal imager in its storage bag and box to protect it from dust, moisture, and physical damage.
- **Environmental Conditions:** Avoid using or storing the device in harsh environments such as extremely high temperatures, high humidity, or strong magnetic fields.

7. Troubleshooting

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
No thermal image displayed.	Imager not properly connected. App not launched or not detecting device. Mobile device not compatible.	Ensure the imager is securely plugged into the USB Type-C port. Restart the application. Check if the app has necessary permissions. Verify your mobile device meets the minimum system requirements (Android with Type-C, or iOS with compatible adapter).
Image is blurry or unclear.	Lens is dirty. Macro lens incorrectly attached (if applicable).	Clean the thermal imager lens with the provided cloth. Ensure the macro lens is correctly aligned and securely attached.
Inaccurate temperature readings.	Incorrect emissivity setting. Measurement distance too far.	Adjust the emissivity setting in the app to match the material being measured. Move closer to the target object for more accurate readings.

8. Specifications

Parameter	Value
Model	T7
Resolution	256 x 192
Wavelength	8-14um
Frame Rate	25Hz
NETD	<50mk@25℃
FOV (Field of View)	56°x42°
Lens	3.2mm
Temperature Measurement Range	-15℃~600℃ (5℉~1112℉)
Temperature Measurement Accuracy	±2℃ or ±2%
Temperature Measurement Modes	Highest, lowest, central point, and area measurement
Supported Languages	Chinese, English, Korean, Portuguese, Russian, Spanish, Italian, Dutch, Polish, Japanese, French, Finnish
Working Temperature	-10℃~75℃ (14℉~167℉)
Storage Temperature	-45℃~85℃ (-49℉~185℉)
IP Rating	IP54
Dimensions	25mm x 40mm x 14mm

Parameter	Value
Net Weight	23g
Certifications	CE, RoHS

9. Safety Information

- Use the mobile phone thermal imager only in normal environments.
- Do not use the device in harsh environments such as areas with extremely high temperatures, high humidity, or strong magnetic fields.
- Avoid direct exposure of the lens to strong light sources, as this may damage the sensor.
- Keep the device out of reach of children.
- Do not attempt to disassemble or modify the device, as this will void the warranty and may cause damage.

10. Warranty and Support

The product comes with a 12-month warranty from the date of purchase. This warranty covers manufacturing defects and malfunctions under normal use. It does not cover damage caused by misuse, accidents, unauthorized modifications, or use in unsuitable environments.
For technical support, warranty claims, or further assistance, please contact TOOLTOP customer service through your purchase platform or the official TOOLTOP website. Please have your product model and purchase details ready when contacting support.
EU Spare Part Availability Duration: 1 Year.