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ETURBEV ET12S

TOOLTOP ET12S Thermal Imaging Camera Multimeter User Manual

Model: ET12S | Brand: ETURBEV

1. Introduction and Overview

The TOOLTOP ET12S is an innovative 2-in-1 device combining a high-performance thermal imaging camera with a versatile digital multimeter. Designed for professionals and enthusiasts, it offers comprehensive diagnostic capabilities for electrical systems, circuit boards, automotive applications, and home appliance maintenance. Its compact design, touch screen interface, and data analysis features make it an indispensable tool for various inspection and measurement tasks.

2. Safety Information and Important Notes

Always observe standard electrical safety precautions when using the multimeter functions. Ensure the device is in good working condition before use.

- **Resistive Touch Screen:** The ET12S features a resistive touch screen. For optimal responsiveness and to prevent damage, it is recommended to use your fingernail or a stylus for screen interactions, rather than the soft pad of your fingertip.
- **Thermal Imaging Calibration:** The thermal imaging detector includes a mechanical control calibration plate to ensure accurate measurements and correct non-uniformity. This calibration occurs approximately every 10 seconds and may cause a brief pause of 1-3 seconds in the display. This is a normal and necessary function for maintaining measurement accuracy.
- **Model Differences:** Be aware that the ET11S model (32x24 IR resolution) offers limited imaging effects compared to the ET12S (90x120 IR resolution). The ET12S provides significantly more detailed thermal images.

3. Product Features

- **2-In-1 Functionality:** Seamlessly switch between thermal imager and multimeter functions with a single click.
- **Touch Screen Display:** Equipped with a 2.8-inch resistive touch screen with 320x480 resolution for intuitive operation.

- **Data Transmission & PC Software Analysis:** Transfer saved thermal images and multimeter measurement results to a computer via USB. Analyze data using the dedicated PC software.
- **Multimeter Capabilities:** Measures DC voltage, AC voltage, resistance, diode, continuity (on/off), and capacitance.
- **Multi-Language Support:** Supports both Chinese and English languages.
- **Battery Management:** Features a built-in lithium battery with USB charging support, automatic screen turn-off, and automatic power-off functions to conserve battery life.
- **Wide Applications:** Ideal for circuit board inspection and maintenance, power supply maintenance, electronic equipment maintenance, and home appliance overhaul.

4. Setup

4.1 Initial Charging

Before first use, fully charge the built-in lithium battery using the provided USB cable. Connect the device to a standard USB power adapter (not included) or a computer's USB port. The charging indicator will show the charging status.

4.2 PC Software Installation

To utilize data transmission and analysis features, download and install the PC software. The software can be downloaded from the following link:
http://doctuchuang.eirbio.cn/fr01/IR-DMM.rar
Follow the on-screen instructions during installation. Ensure your computer meets the minimum system requirements.

5. Operating Instructions

5.1 Power On/Off

Press and hold the power button (usually located on the side or front panel) to turn the device on or off.

5.2 Switching Functions (Thermal Imager / Multimeter)

The ET12S allows for one-click switching between its thermal imaging and multimeter modes. Locate the dedicated button or on-screen icon for function switching (e.g., labeled 'IR/DMM' or similar). Tap it to toggle between modes.

5.3 Using the Thermal Imager

In thermal imaging mode, the screen will display a thermal map of the environment. Point the camera lens towards the object or area you wish to inspect. The device will automatically display temperature readings and highlight hot/cold spots. Remember the automatic calibration pauses mentioned in Section 2.



Figure 5.3.1: TOOLTOP ET12S displaying both thermal imaging and multimeter readings.



Figure 5.3.2: Thermal image comparison between ET12S and ET11S models, highlighting the superior detail of the ET12S.

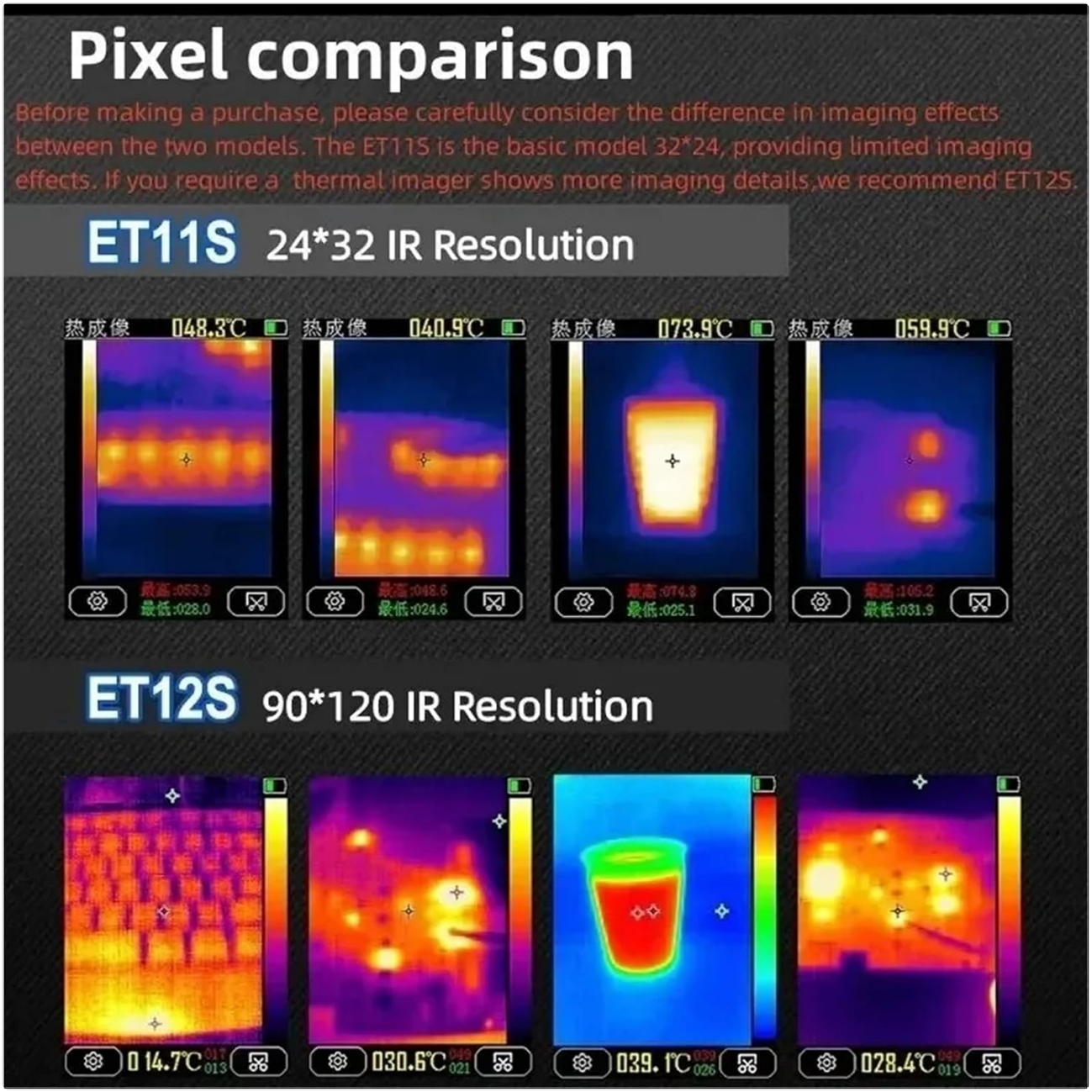


Figure 5.3.3: Pixel resolution comparison: ET11S (24x32) vs. ET12S (90x120).

5.4 Using the Multimeter

In multimeter mode, connect the test leads to the appropriate input jacks on the device and to the circuit or component you wish to measure. Select the desired measurement function (e.g., DCV, ACV, Resistance, Diode, Capacitance) using the on-screen controls or physical buttons. The measurement will be displayed on the screen.



Figure 5.4.1: TOOLTOP ET12S device with included test leads.

5.5 Data Transfer

Connect the ET12S to your computer using a USB cable. The device should be recognized as a storage device. You can then transfer saved thermal images and multimeter data files to your computer for analysis with the PC software.

6. Maintenance

6.1 Cleaning

Wipe the device exterior with a soft, dry cloth. For stubborn dirt, a slightly damp cloth can be used. Do not use abrasive cleaners or solvents. Keep the camera lens and screen clean for optimal performance.

6.2 Battery Care

Recharge the battery regularly, especially if the device will not be used for an extended period. Avoid fully discharging the battery frequently to prolong its lifespan.

7. Troubleshooting

- **Screen Unresponsive:** If the resistive touch screen is not responding, ensure you are using a fingernail or stylus. If the issue persists, try restarting the device.
- **Thermal Image Pauses:** As noted in Section 2, brief pauses (1-3 seconds) in the thermal image display are normal due to automatic calibration. This is not a malfunction.
- **Device Not Turning On:** Ensure the battery is sufficiently charged. Connect the device to a USB power source and attempt to power it on again.
- **Incorrect Multimeter Readings:** Check that the test leads are correctly inserted into the appropriate jacks and that the correct measurement function is selected. Ensure good contact with the circuit or component being tested.
- **PC Software Connection Issues:** Verify the USB cable connection. Ensure the PC software is correctly installed and updated. Try restarting both the device and the computer.

8. Specifications

Feature	Specification
Model	ET12S
Thermal Imager Resolution	90x120 IR Resolution
Display	2.8-inch Resistive Touch Screen, 320x480 resolution
Multimeter Functions	DC Voltage, AC Voltage, Resistance, Diode, Continuity, Capacitance
Language Support	Chinese, English
Battery	Built-in Lithium Battery (USB Charging)
Automatic Features	Auto Screen Off, Auto Power Off
Package Dimensions	1.18 x 0.79 x 0.39 inches
Item Weight	1.76 ounces
Manufacturer	ETURBEV
Country of Origin	China

9. Warranty and Support

For warranty information and technical support, please refer to the documentation included with your purchase or contact the manufacturer, ETURBEV, directly through their official channels. Keep your purchase receipt as proof of purchase for any warranty claims.

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