

TOPDON TC005

TOPDON TC005 Thermal Imaging Camera User Manual

Model: TC005

1. INTRODUCTION

The TOPDON TC005 is a high-resolution dual-camera thermal imaging camera designed for precise temperature measurement and analysis. Equipped with both an infrared lens (256x192 IR resolution) and a 2MP visible light camera, it offers versatile imaging modes and a wide temperature measurement range. This manual provides essential information for the safe and effective use of your TC005 thermal imager.



Image: Overview of the TOPDON TC005 Dual-Camera Thermal Imager, highlighting its high resolution, PC analysis, 2MP visible light camera, wide temperature range, high/low temperature alarm, 12-hour battery life, and video recording capabilities.

Key features include:

- **Dual Light Linkage:** Combines 256x192 IR resolution with a 2MP visible light lens for comprehensive imaging.
- **Wide Temperature Range:** Measures from -4°F to 1022°F (-20°C to 550°C) with high accuracy.
- **PC Analysis:** Supports online and offline analysis with 2D/3D imaging and data export.
- **Multiple Imaging Modes:** Offers thermal imaging, dual-light integration, visible light, and picture-in-picture modes.
- **Long Battery Life:** Up to 12 hours of operation on a single charge.

2. WHAT'S IN THE BOX

Upon opening the package, please verify that all items listed below are present and in good condition:

- TOPDON TC005 Thermal Imager (x1)
- 16GB Memory Card (x1)
- USB-C Cable (x1)
- 5V Charger (x1)
- Protection Bag (x1)
- User Manual (x1)



Image: The complete package contents of the TOPDON TC005, showing the thermal imager, power adapter, USB-C cable, 16GB memory card, and a protective carrying pouch.

3. SETUP

3.1 Charging the Device

Before first use, fully charge the TC005. Connect the provided USB-C cable to the device's USB-C port and the other end to the 5V charger. A full charge typically takes approximately 4 hours and provides up to 12 hours of battery life.

12-HOUR BATTERY LIFE



5000mAh
Rechargeable Battery



Auto Power-Off:
5/10/20 Minutes



Adjustable
Screen Brightness



Image: The TC005 thermal imager displaying its battery life and indicating its 5000mAh rechargeable battery, auto power-off options, and adjustable screen brightness.

3.2 Inserting the Memory Card

Locate the SD card slot on the device. Insert the provided 16GB memory card into the slot until it clicks into place. This card is essential for saving images and videos.

3.3 Powering On/Off

To power on the device, press and hold the power button (usually located near the display) for a few seconds until the screen illuminates. To power off, press and hold the power button again until the device shuts down.

4. OPERATING INSTRUCTIONS

4.1 Imaging Modes and Color Palettes

The TC005 supports four primary imaging modes and seven color palettes to visualize temperature differences effectively:

- **Thermal Imaging:** Displays only the infrared thermal image.
- **Dual-Light Integration:** Blends thermal and visible light images for enhanced detail.
- **Visible Light:** Displays a standard visual image from the 2MP camera.
- **Picture-in-Picture:** Overlays a smaller thermal image onto a larger visible light image.

You can select from 7 color palettes (e.g., RainBowHC, Lava, White Hot, Iron, Black Hot, RainBow, RdGy) to best suit your application and visual preference.

4 IMAGING MODES & 7 COLOR PALETTES FOR MORE CREATIVITY



Image: A visual representation of the four imaging modes (Thermal Imaging, Dual Light Integration, Picture-in-Picture, Visible Light) and seven color palettes available on the TC005 thermal imager.

4.2 Temperature Measurement

The device offers three temperature measurement modes:

- **Central Point:** Measures the temperature at the center of the screen.
- **Highest Temperature:** Automatically tracks and displays the hottest spot in the frame.
- **Lowest Temperature:** Automatically tracks and displays the coldest spot in the frame.

The TC005 also features automatic tracking and alarm functions, which can warn the user when detected

temperatures are out of a set range.



Image: The TC005 thermal imager showing a high temperature alarm on its screen, indicating that the detected temperature is out of range, with an electrical substation in the background.

4.3 Adjustable Emissivity

For accurate temperature readings, it is crucial to adjust the emissivity setting based on the material being measured. The TC005 allows you to set the emissivity to improve measurement precision. Refer to the device's menu for a list of common materials and their corresponding emissivity values.

ADJUSTABLE EMISSIVITY

Adjust Ambient Temperature, Distance to Spot, and Emissivity to Read Temperature more Accurately.

Emissivity Of Common Objects			
Material	Emissivity	Material	Emissivity
Aluminium	0.30	Iron	0.70
Asbestos	0.95	Lead	0.50
Asphalt	0.95	Limestone	0.98
Basalt	0.70	Oil	0.94
Brass	0.50	Paint	0.93
● Brick	0.90	Paper	0.95
Carbon Ceramic	0.85	Plastic	0.95
Concrete	0.95	Rubber	0.95
Copper	0.95	Sand	0.90
Oil sludge	0.94	Skin	0.98
Frozen food	0.9	Steel	0.90
Hot food	0.93	Fabric	0.80
Glass	0.85	Water	0.94
Ice	0.98	Wood	0.93

Image: The TC005 thermal imager's display showing the 'Measure Parameter' menu with an adjustable emissivity setting, alongside

a table listing common objects and their recommended emissivity values for accurate temperature measurement.

4.4 Photo and Video Recording

The TC005 supports both photo and video recording. Use the dedicated camera button to capture images or start/stop video recording. All captured media is saved to the inserted memory card.



Image: The TC005 thermal imager illustrating its ability to capture both thermal photos and videos, with examples of different thermal images and a video playback screen.

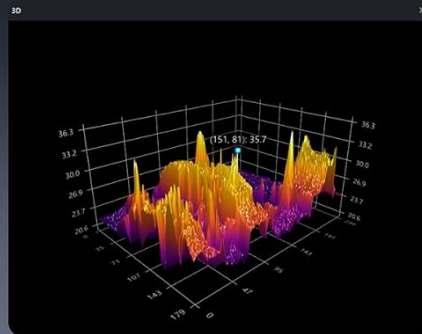
4.5 PC Online and Offline Analysis

Connect the TC005 to a Windows computer via the USB-C cable for real-time online analysis. The device supports 3D imaging and point-line-surface temperature measurement. For offline analysis, transfer saved images and videos to your computer to generate data reports and perform deeper analysis using the dedicated TDView software.

2D & 3D OFFLINE IMAGE ANALYSIS



Supported
Data Export



Record
Temperature
Changes in 3D

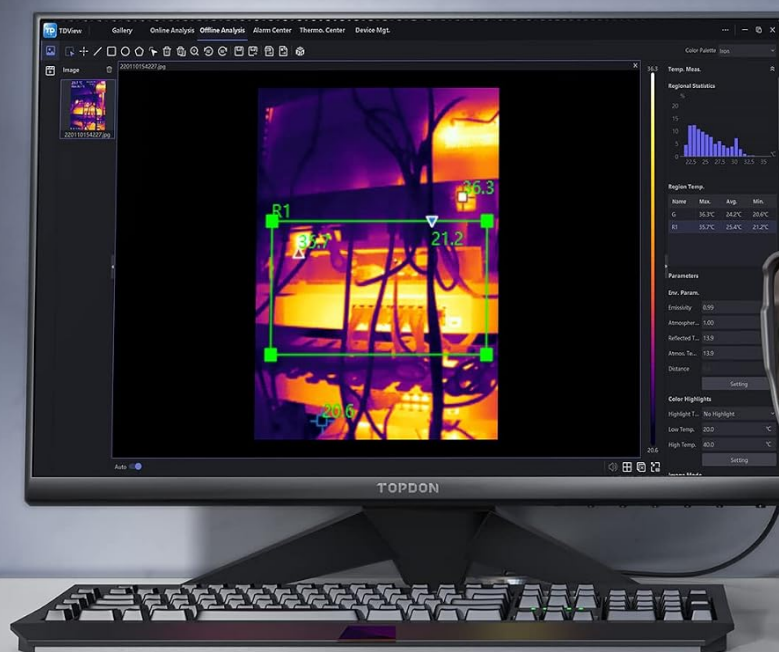


Image: The TC005 thermal imager connected to a computer, demonstrating its capability for 2D and 3D offline image analysis, including data export and 3D temperature change recording.

Your browser does not support the video tag.

Video: An official TOPDON video demonstrating the thermal camera's ability to 'See More Than the Human Eye', showcasing its thermal imaging capabilities in various scenarios.

5. MAINTENANCE

To ensure the longevity and optimal performance of your TOPDON TC005, follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to clean the device's exterior. For the lens, use a specialized lens cleaning cloth and solution. Avoid abrasive materials or harsh chemicals.
- **Storage:** Store the device in its protective bag in a cool, dry place when not in use.
- **Durability:** The TC005 features IP54 protection and a 2-meter drop-resistant design, offering robust durability for various environments. However, avoid intentional drops or exposure to extreme conditions beyond its rating.



Image: An illustration showing the TOPDON TC005 thermal imager surviving a 2-meter drop, emphasizing its robust and drop-proof design.

6. TROUBLESHOOTING

This section addresses common issues you might encounter with your TOPDON TC005. If you experience problems not listed here, please contact customer support.

Problem	Possible Cause	Solution
Device does not power on.	Low battery; device frozen.	Charge the device fully. If unresponsive, perform a hard reset (refer to manual for specific steps if available, otherwise hold power button for extended period).
Display freezes frequently.	Internal calibration (shutter); software issue.	Frequent freezing might be due to the internal shutter for flat field correction, which is normal. If excessive, ensure firmware is updated.
Temperature readings seem inaccurate.	Incorrect emissivity setting; distance to object.	Adjust the emissivity setting according to the material being measured. Ensure proper distance to the target object.
Thermal and visual images are misaligned.	Calibration issue; incorrect distance setting.	Manually set the distance from the object to the camera in the menu. If the issue persists, contact technical support for calibration assistance.
Cannot connect to PC for analysis.	Driver issue; cable problem; software not installed.	Ensure the correct drivers are installed. Try a different USB-C cable. Verify that the TDView software is correctly installed on your Windows computer.

7. SPECIFICATIONS

Feature	Detail
Model Number	TC005

Feature	Detail
Infrared Resolution	256 x 192 pixels
Visible Light Camera	2 Megapixels
Temperature Range	-4°F to 1022°F (-20°C to 550°C)
Thermal Sensitivity	≤40mK
Refresh Rate	20 Hz
Battery Life	Up to 12 hours
Memory	16GB (expandable)
Protection Rating	IP54
Drop Resistance	2 meters
Item Weight	2.27 pounds
Package Dimensions	12.6 x 9.76 x 5.08 inches
Languages Supported	13 languages including English, German, Spanish, French, Russian, Polish, Turkish, Italian, Hungarian, Japanese, Portuguese, Chinese (Traditional), Korean.

OPTIMIZED HARDWARE



Image: A detailed diagram of the TOPDON TC005's optimized hardware, labeling components such as the USB-C port, SD card slot, 2.8-inch screen, two LED flashlights, infrared camera, visible light camera, camera button, and tripod mounting hole.

8. WARRANTY AND SUPPORT

The TOPDON TC005 comes with a 1-year warranty and lifetime technical support. For any inquiries, technical assistance, or warranty claims, please contact TOPDON customer service.

- **Official User Guide (PDF):** [Download User Guide](#)
- **TOPDON Brand Store:** [Visit TOPDON Store on Amazon](#)

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ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question

and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question