

TOPDON[®]



TC003

See More Than The Human Eye



Thermal Imager

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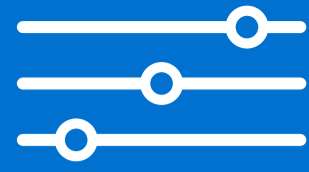


TC003

The TC003 is a cutting-edge thermal camera that provides high-resolution thermal imaging to a wide audience. With its advanced features, the TC003 delivers high-quality imaging (256x192), exceptional temperature sensitivity (40mk), and unparalleled resolution (down to 0.1°C). Additionally, the TC003 boasts a 5-inch touch screen, a 5-megapixel visible light camera for overlapping images, and temperature waveform graphing. The OTG function further expands the TC003's capabilities, enabling it to link to an endoscope for more specialized thermal work.

This versatile thermal imager is specially designed for maintenance and inspecting, providing accurate thermal imaging services to support various maintenance tasks, such as professional automotive repairs, HVAC systems, and protecting crops or livestock from predators.

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Specifications



Screen:

5 inches, 800 X 480 Pixels

Gross Weight:

900g (31.75oz)

Dimensions:

7.0*3.8*0.8 inches (178*96*20 mm)

Parameters

Operating System:

Android 11.0

IR Resolution:

256x192 Pixel

Heat Sensitivity:

40mk

Temp. Range:

-4°F to +1022°F (-20~550°C)

Battery Capacity:

5000mAh

Connectivity:

Bluetooth, Wi-Fi

Memory:

2+32G

Temp. Units:

Celsius, Fahrenheit

FOV:

56.0° x 42.2° x 71.3°

Refresh Rate:

25Hz

Multilingual Support

13 Languages:

English, Chinese, Japanese, French, Spanish, Italian, Portuguese, German, Polish, Russian, Dutch, Czech, Ukrainian



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Superior Image Quality with an IR Resolution of 256x192

The TOPDON TC003 infrared thermal camera boasts an ultra-high resolution of 256x192, providing superior image quality and clarity for your thermal imaging needs.

With its high-resolution capabilities, the TC003 can display thermal images of your target with exceptional detail. Making the TC003 an ideal tool for inspecting objects where surface temperature is difficult to distinguish, such as circuit boards and other electronics.



Brief

Highly Accurate Temperature Readings

The TC003's thermal imager is equipped with an impressive heat sensitivity of 40mk, allowing it to detect even the slightest temperature changes with precision and accuracy.

With its advanced thermal imaging capabilities, the TC003 can perform temperature detection with an error rate of $\pm 2^{\circ}\text{C}$ or 2% of the maximum temperature and measure temperatures with a thermal to 0.1°C .

This ensures that you get reliable and accurate temperature readings every time.

Specs

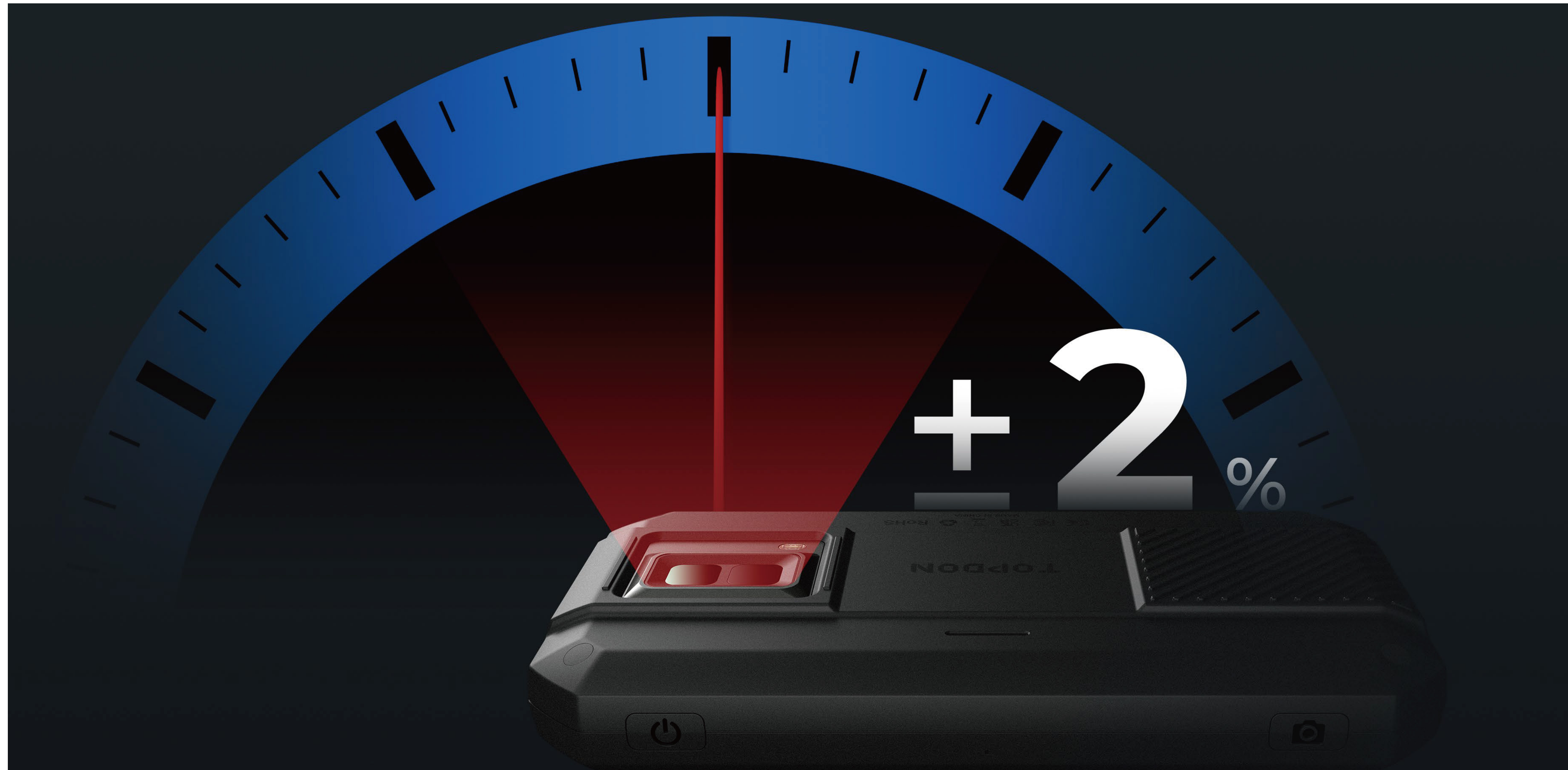
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Expanded Capabilities with OTG Functionality

The TC003 comes equipped with OTG (On-The-Go) functionality, which allows the tool to function as a host computer, expanding its capabilities beyond

temperature reading and into your daily life. With OTG support, the TC003 can be used with a variety of external devices, such as endoscopes, oscilloscopes, and USB drives

with storage functions, enabling additional functional expansion and solving a wider range of problems.



Brief

Optimized Testing Range

The TOPDON TC003 thermal camera offers an expansive thermal testing range that spans from -4°F to $+1022^{\circ}\text{F}$ ($-20\sim 550^{\circ}\text{C}$), allowing it to perform temperature readings in a wide variety of environments.

Whether you need to detect high temperatures in industrial settings or low temperatures in refrigeration systems, the TC003 has you covered.

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4 Temperature Reading Modes

The TC003 comes with 4 different temperature detecting modes that allow you to take temperature readings in a dot format, a line (highest and lowest), a square plane (highest and lowest), or analyze the full camera view (center spot, highest and lowest).

Select up to 3 areas for each dimension, enabling you to read temperatures in multiple areas at once. Additionally, the pseudo color bar on the right side of the screen displays the highest and lowest temperatures of the targeted area, making it easy to identify temperature differences and hotspots.



Brief

4 Imaging Modes & 11 Palettes

The TC003 thermal camera is designed with both infrared and visible light dual camera modes, and supports 4 imaging modes for thermal analysis: visible light, thermal imaging, thermal fusion (which blends 50% of the visible light image to provide a clearer view of the object), and outline fusion (ideal for objects with surface temperatures that are difficult to distinguish).

In addition, this versatile tool offers 11 unique color palettes that allow users to customize the temperature display according to their preferences.

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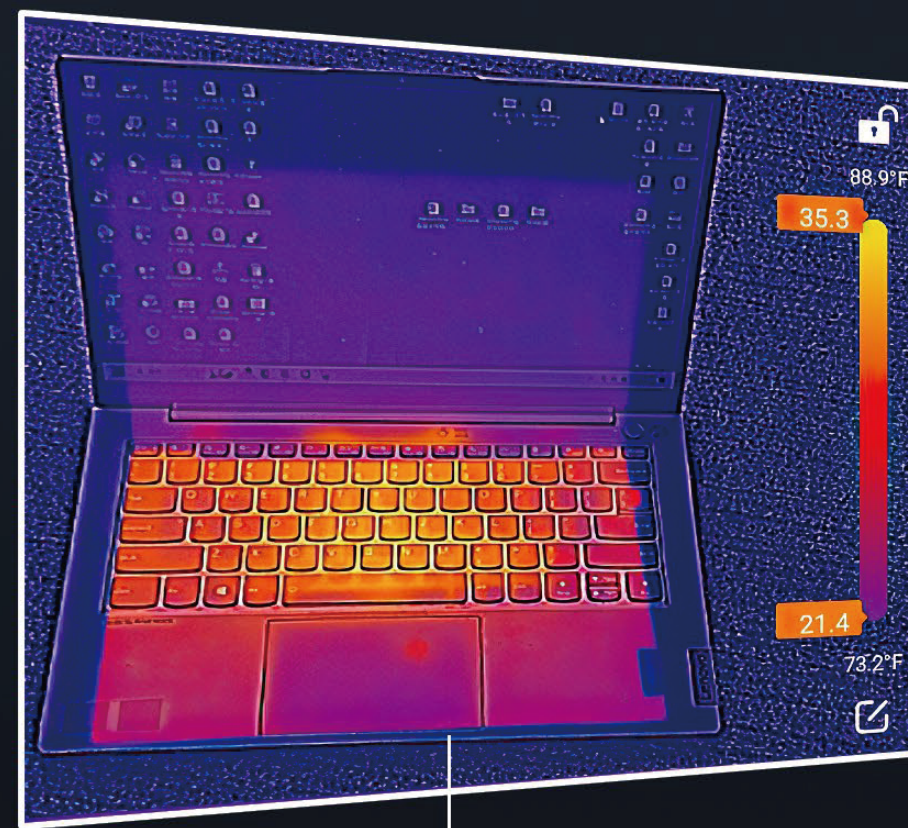
Functions

What's In The Box?

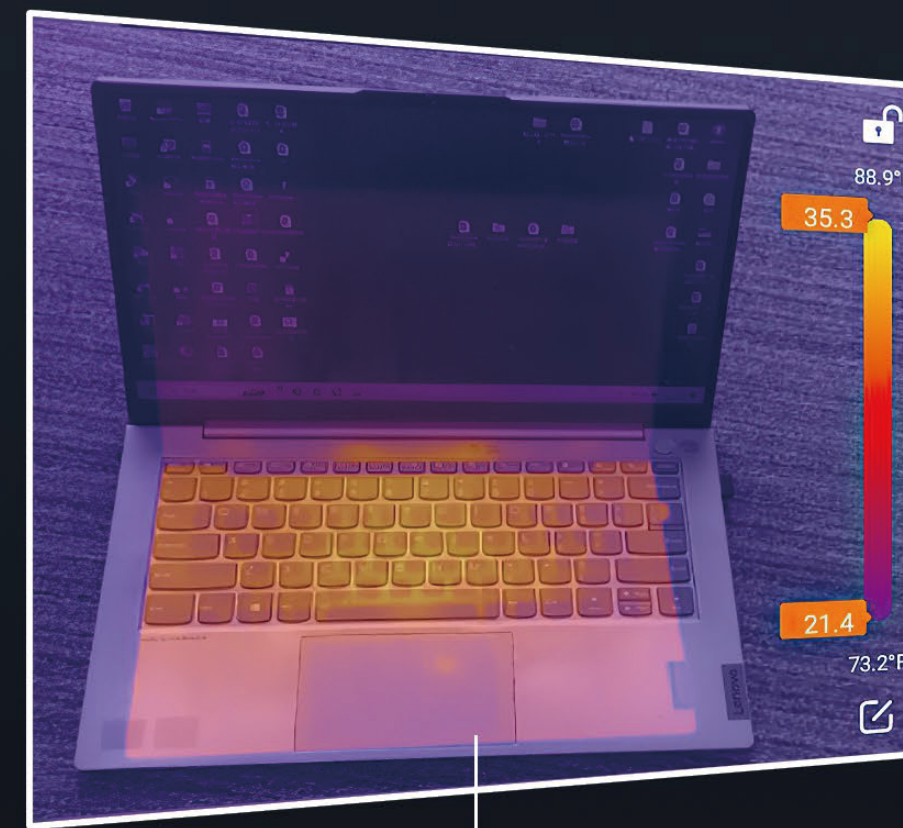
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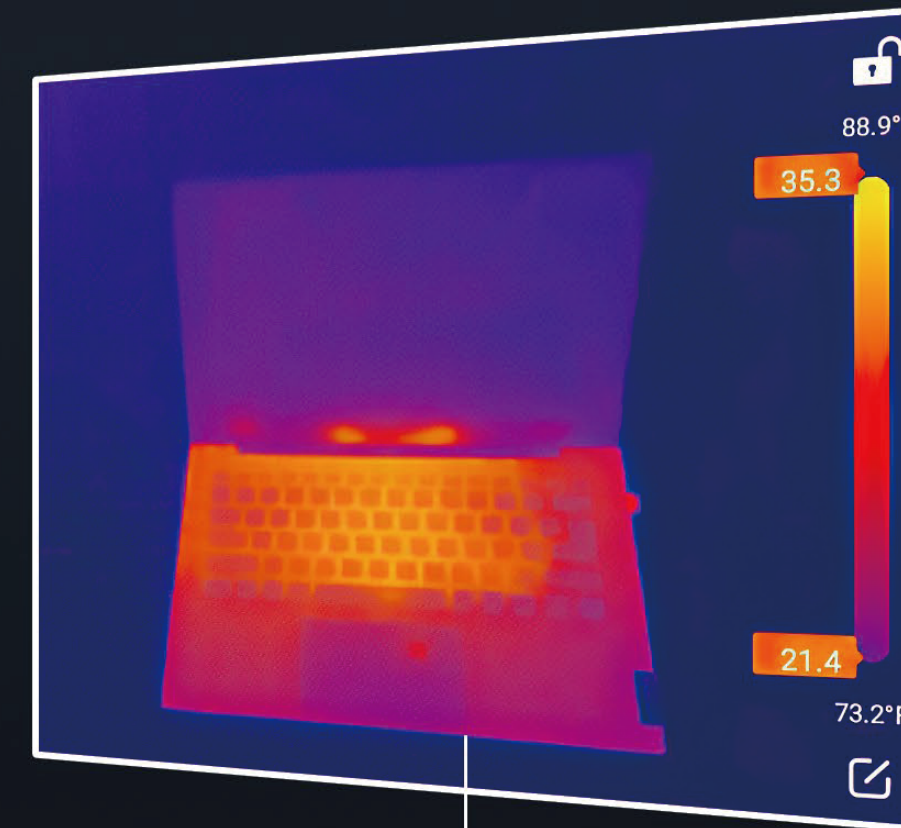
4 IMAGING MODES



Outline Fusion



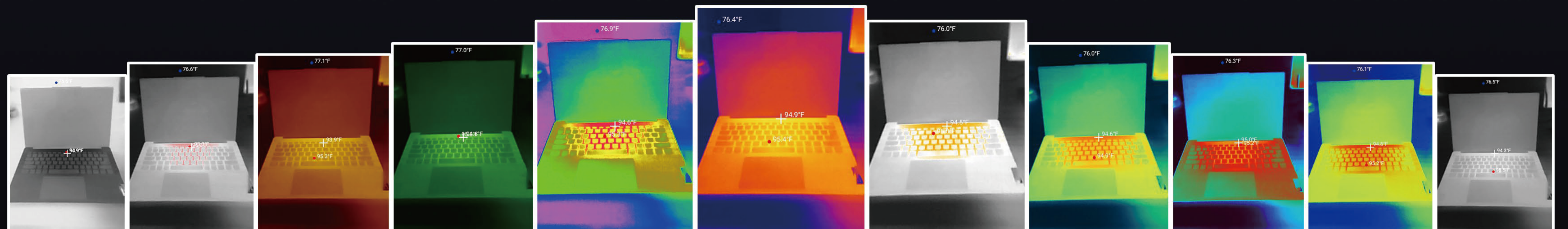
Thermal Fusion



Thermal Imaging



Visible Light



Brief

View Temperature Differences Easily

The TC003 thermal camera empowers users to set upper and lower limits to highlight the temperature of targeted areas. It features an intuitive color bar, allowing for easy swiping to select the temperature range you wish to highlight. When the temperature exceeds the set range, it is displayed in black and white colors, providing clarity when viewing temperature differences.

The TC003 thermal camera goes above and beyond most thermal cameras by providing clear images with greater detail. Users can adjust the image sharpness and contrast to make the field of view even clearer, making it easier to identify hotspots and temperature variations.

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Advanced Secondary Analysis - Unlock the Full Potential of Thermal Imaging

Perform advanced secondary analysis on saved thermal images to reveal the temperature of each pixel. This advanced infrared thermal camera now supports detailed analysis for saved thermal images in your gallery.

Swipe the color bar to highlight the desired temperature range, Read Dot, Line, and Plane temperatures on any pixel for in-depth analysis, Use this feature to gain a comprehensive understanding of thermal data.

Specs

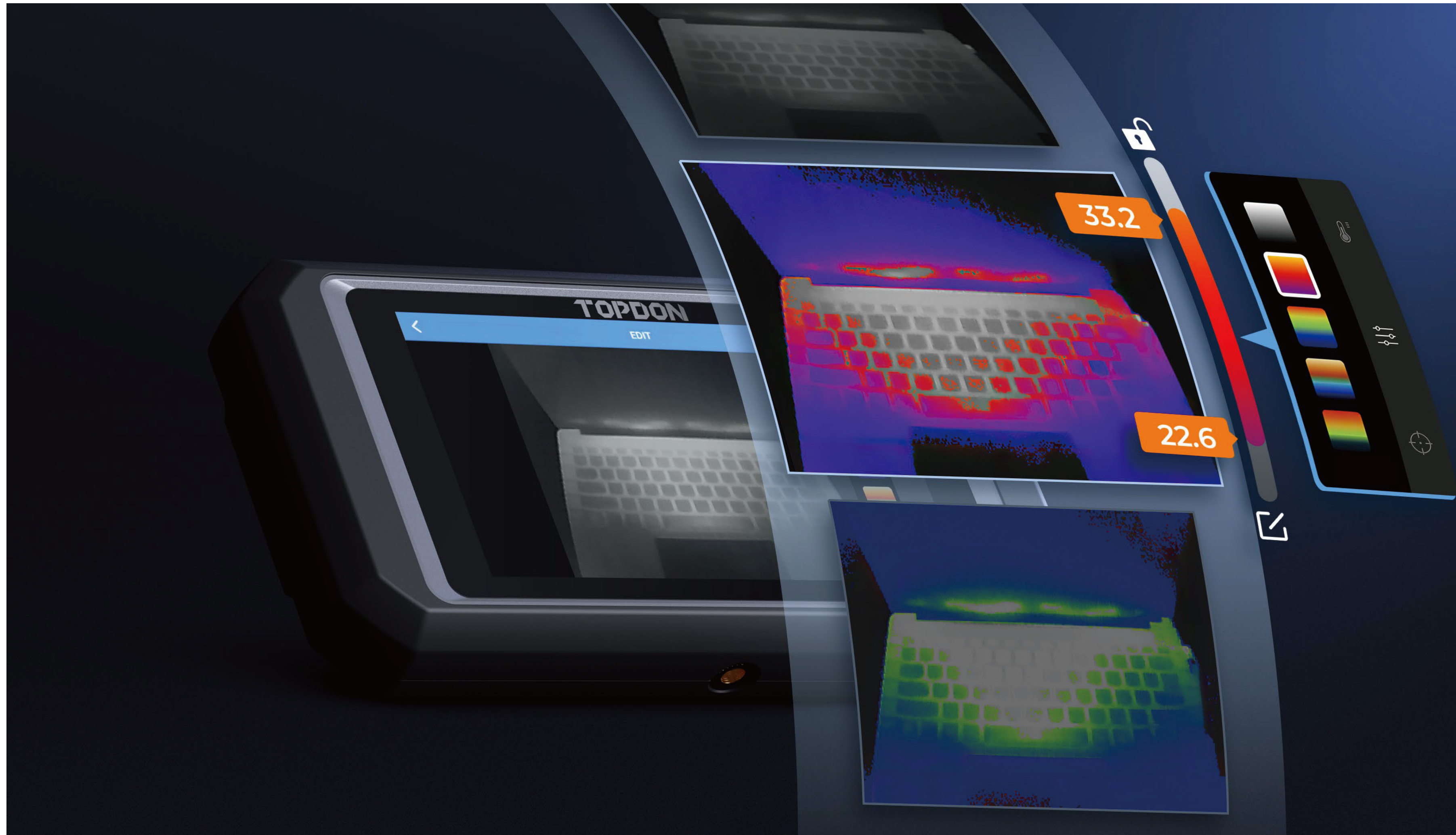
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Brief

Monitor Temperature Change by Waveform Graph

The TOPDON infrared thermal camera can continuously measure the temperature of an area in dot, line, or plane format and store the data in the app.

This data can provide you with the high and low temperatures of objects in the area over time, which can be used to generate a waveform graph.

This feature is particularly useful for determining if a device is regularly overheating, and easily tracks temperature changes to ensure the safe and efficient operation of your equipment.

Specs

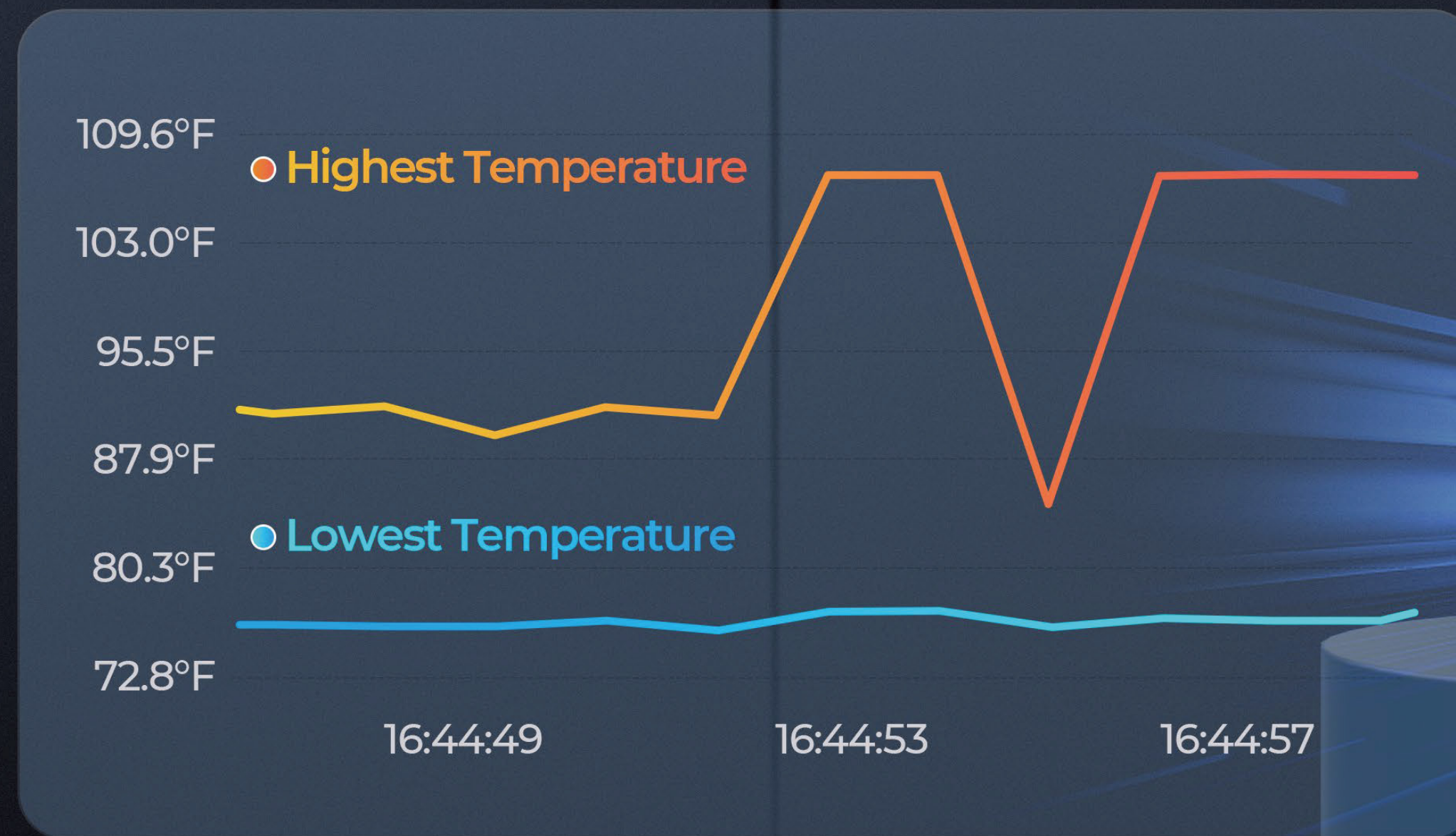
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Durable and Resilient Thermal Camera

This device is designed to withstand drops up to 2 meters, making it highly durable and resistant to damage.

Additionally, it has overcharge protection, which prevents the battery from getting damaged or overheating.

The device's IP55 water and dust-resistant design means that it can withstand exposure to grime and humidity.

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Hardware That Matters

- 800 x 480 resolution, the 5" touch screen
- Screw Hole (1/4-20 unc)
- Easily switch between landscape and portrait mode
- Low-light night vision lens

- Built-in Speaker
- Built-in flashlight
- Screen shot and screen recording functions
- Project temperature readings

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The feature cards are arranged in two rows of four. The top row features: '5" Touch Screen' (blue text), 'Screw Hole Mounts to Tripod' (yellow text), 'Built-in Flashlight' (blue text), and 'Auto-Rotating Screen' (purple text). The bottom row features: 'Takes Pictures Clearly even at night' (white text), 'Built-in Speaker' (yellow text), 'Supports Screen Shots and screen recording' (green text), and 'Screen Projection supported' (white text).



Brief

Unparalleled Accuracy with Temperature Correction

Adjust for Ambient Temperature, Distance to Spot, and Emissivity with the TC003 Thermal Camera. An emissivity chart of common materials is available under Personal Information.

This function is especially helpful in situations where surfaces have different emissivity values, which can affect the accuracy of temperature readings.

Specs

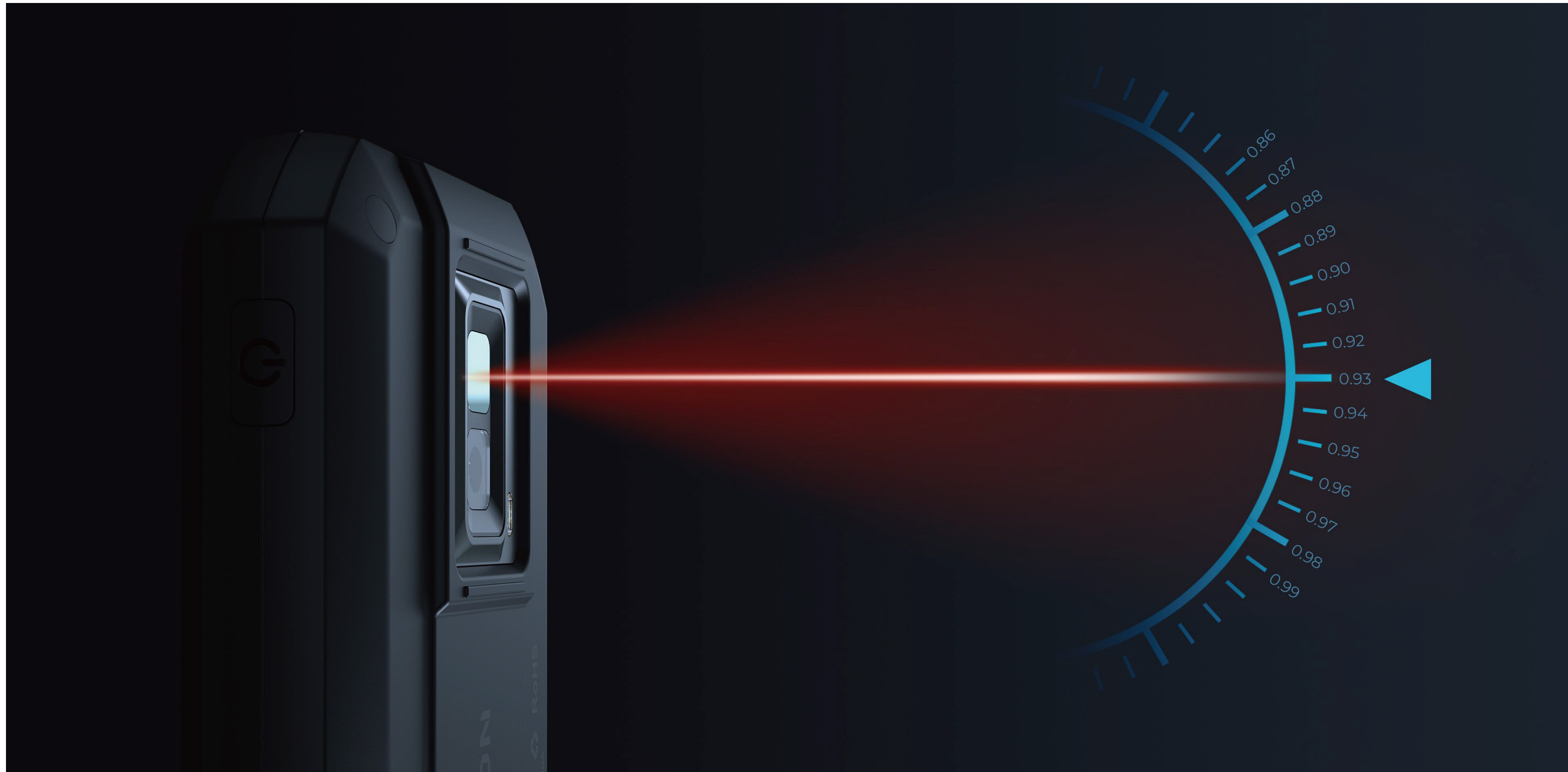
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Compatible with Windows Laptops

With the TCView software installed, the TC003 is fully compatible with Windows laptops. By connecting the TC003 to a laptop, users can test a wider range of areas using the dimensions selection (Point, Line, Surface).

The PC app also offers a vast selection of 99 color palettes, providing users with convenient customization options.

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Brief



TC003 Functions

Unleash the Power of Thermal Imaging with the TC003

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Keep your Thermal Imaging App and OS up-to-date with Over-The-Air (OTA) updates, for free.



Share your thermal images and videos easily through Bluetooth, App, or USB connection.



Experience a smoother and faster operation with the Android 11.0 operating system.



Store up to 120,000 thermal images and 45 hours of videos for easy access and analysis.

What's In The Box?



Mount your device on a tripod for a stable view and more precise temperature readings.



Enjoy the convenience of a tablet with features such as a camera, Chrome, and a video player.



View thermal images fluently with a 25Hz refresh rate.

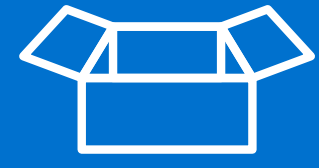


Adjust the image sharpness and contrast to get the clearest possible view of your data.

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TC003 Thermal Camera



x1

Carrying Bag



x1

USB Cable (Type-A to Type-C)



x1

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Package Box

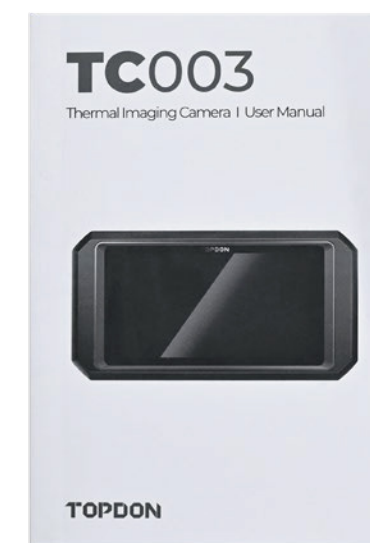


Power Adapter



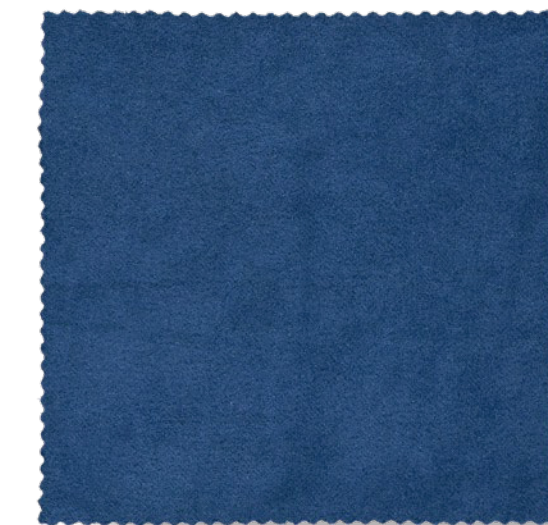
x1

User Manual



x1

Cleaning Cloth








x1

What's In The Box?

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| MODEL | TC001 | TC002 | TC003 | TC004 | TC005 |
|--------------------------------------|--|--|--|--|--|
| SPECIFICATIONS |  |  |  |  |  |
| | | | | | |
| Display screen | NA | NA | 5-inch, 800*480 touchscreen | 2.8 inch, 320*240 screen | |
| Operating system | NA | NA | Android | Linux | Linux |
| Compatible systems | Android/Windows devices | iOS devices | Android/Windows devices | Standalone use/ Windows devices | Standalone use/ Windows devices |
| Storage | NA | NA | 2GB RAM+32GB storage | 2GB RAM+16GB TF card | |
| Battery type | NA | NA | Built-in 5000 mAh battery | Built-in 5000 mAh battery | Built-in 5000 mAh battery |
| Charging time | / | / | 3h | 4h | |
| Standby time | / | / | 4h | 12h | |
| Operating temperature | -10°C~+50°C | -10°C~+50°C | -10°C~+50°C | -10°C~+50°C | |
| Operating voltage | 5V | 5V | 5V | 5V | 5V |
| Measuring range | -20 ~550 °C (-4 ~ 1022°F) | -20 ~550 °C (-4 ~ 1022°F) | -20 ~550 °C (-4 ~ 1022°F) | -20-350 °C (-4 ~ 662°F) | -20 ~550 °C (-4 ~ 1022°F) |
| Temperature resolution | 0.1°C | 0.1°C | 0.1°C | 0.1°C | |
| Temperature units | Celsius, Fahrenheit | Celsius, Fahrenheit | Celsius, Fahrenheit | Celsius, Fahrenheit, Kelvin | |
| Measuring modes | Dot, line, plane | Dot, line, plane | Dot, line, plane | Center spot/hot spot/ cold spot | Center spot/hot spot/ cold spot |
| Measuring accuracy | ±2°C or ±2% | ±2°C or ±2% | ±2°C or ±2% | ±2°C or ±2% | |
| Gross weight (g) | 220 | 220 | 900 | 1100 | 1100 |
| Device weight (g) | 30 | 30 | 367 | 520 | 520 |
| Dimensions (mm) | 140*102*46 | 140*102*46 | 221*140*186 | 280*165*120 | 280*165*120 |
| LED flashlight | NA | NA | Yes | Yes | |
| Visible light camera | NA | NA | 5-megapixel low-light night vision camera | NA | 2 megapixels |
| Infrared light resolution | 256*192 | 256*192 | 256*192 | 256*192 | |
| Image modes | Thermal Imaging, PIP, | Thermal Imaging, PIP, | Thermal Imaging, Visible, Dual Light, PIP | Thermal Imaging | Thermal Imaging, Dual Light, Visible, Picture-in-Picture |
| Pseudo color bar | 9 colors | 11 colors | 9 colors | 4 colors (white hot, black hot, iron, rainbow) | 7 colors (white hot, black hot, lava, iron, rainbow, rainbowHC, RdCy) |
| Frame rate | 25Hz | 25Hz | 25Hz | 25Hz | |
| NETD | <40mK | <40mK | <40mK | <40mK | |
| Spectral range | 8 – 14µm | 8 – 14µm | 8 – 14µm | 8 – 14µm | |
| FOV | 56.0°×42.2°×71.3° | 56.0°×42.2°×71.3° | 56.0°×42.2°×71.3° | 52.5°x 39.5° | |
| Focal range | 3.2mm | 3.2mm | 3.2mm | 3.2mm | |
| Tripod screw hole | / | / | Yes | Yes | |
| Drop, Impact, & Vibration Resistance | 2m | 2m | 1.5m | 2m, impact 25g (IEC 60068-2-27), vibration 2.5g (IEC60068-2-6) | |
| Waterproof | / | / | IP55 | IP54 | |
| High/low temperature alarms | Available soon | Available soon | Available soon | Yes | |
| Video recording | Yes | Yes | Yes | Yes | |
| Video transfer via USB | Yes | No | Yes | Yes | |
| PC-based analysis software | Yes | No | Yes | Supports imagery analysis with PC | |
| Auto shutdown | / | / | Yes | 5 mins, 10 mins, 20 mins, Off | |
| Languages | English, Chinese, Japanese, French, Spanish, Italian, Portuguese, German, Polish, Russian, Dutch, Czech, Ukrainian | English, Chinese, Japanese, French, Spanish, Italian, Portuguese, German, Polish, Russian, Dutch, Czech, Ukrainian | English, Chinese, Japanese, French, Spanish, Italian, Portuguese, German, Polish, Russian, Dutch, Czech, Ukrainian | 13 languages (English, Traditional Chinese, Korean, Japanese, French, Spanish, Italian, Portuguese, German, Polish, Russian, Hungarian, Turkish) | |

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Question

While I'm using the thermal imaging function, why is there a clicking sound with a frozen screen, once every few dozens of seconds?

Features

Answer

As the temperature of the infrared imaging camera changes slightly during use, to ensure measurement accuracy, a periodic internal temperature calibration is needed every a few dozens of seconds. The micro-motor controlled activation or deactivation of such internal calibration makes a clicking sound during which the screen freezes for about one second. To turn off the internal calibration function, please open the TC003 app, go to Personal Information, and turn off Auto shutter.

Functions

Question

What's In
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Can the TC003 detect objects underwater, through glass or a wall?

Answer

No. Infrared detectors mainly detects 8 to 14 μm long-wave infrared areas, and can only be used to measure surface temperature.

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Question

Why is the temperature reading lower when the device is farther from the object and higher when the device gets closer to the object?

Features

Answer

Infrared radiation attenuates when passing through the atmosphere. The longer the distance, the greater the attenuation. Thus, the accuracy of temperature measurement at a distance will decrease. To ensure accuracy of measurement, go to Personal Information > Temperature Correction > Distance to Spot, and input the actual distance (max: 5 meters) to get the corrected temperature.

Functions

Question

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Why is the measured temperature range not accurate?

Answer

The temperature accuracy of the TC003 is 2%. This is likely because you have selected the wrong temperature range. The TC003 provides a normal temperature range of -4 to 302°F (-20 to 150°C), and a high temperature range of 302° to 1022°F (150 to 550°C). Please select the corresponding range in the app before measuring.

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What external factors will affect the infrared temperature measurement?

Features

Answer

The following factors will have an impact on the measurement results:

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- a)** Emissivity of the object surface.
- b)** Ambient temperature: The object will reflect the infrared rays emitted by surrounding objects, which affects the temperature measurement of the object itself.
- c)** Atmospheric temperature: The atmosphere itself also emits infrared rays.
- d)** Atmospheric transmittance: the infrared rays emitted by the object are attenuated in the atmosphere.
- e)** Distance: the longer the distance, the greater the attenuation of the infrared rays emitted by the object in the atmosphere."

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