

TOPDON®



TS004

User Manual

1. About TS004

Thank you for buying TS004, a handheld thermal scope designed for outdoor enthusiasts.

Before using TS004, please read this manual carefully and thoroughly.

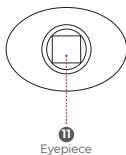
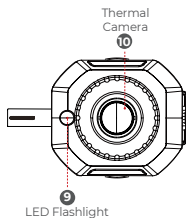
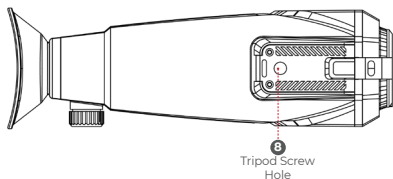
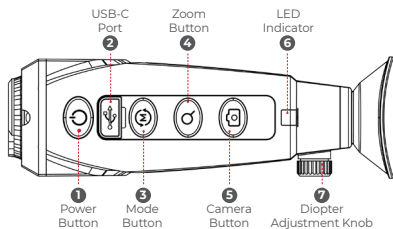
2. Cautions

- Do not point the thermal scope at the sun or other strong energy sources for a long period of time. Otherwise there might be damage to the detector in the scope.
- Keep the thermal scope away from water to avoid electricity leakage or short circuit.
- Do not touch the lens with your hands. Do not knock, pry, puncture or scratch the lens.
- Do not disassemble the thermal scope.

3. What's in the Box?

- TS004
- USB-A to USB-C Cable
- Hanging Strap
- Storage Bag
- User Manual

4. Product Overview



4.1 Buttons

The buttons on TS004 are multi-functional. The explanations are given below.



Power Button

- When TS004 is powered off, you can press and hold this button to power on TS004.
- When TS004 is powered on,
 - You can press and hold this button to power off TS004.
 - You can press this button to get TS004 into the standby status.
- When TS004 is in the standby status, you can press this button to exit this status.



Camera Button

- When TS004 is powered on, you can press this button to capture a photo.
- When TS004 is powered on, you can press and hold this button to record a video.



Zoom Button

- When TS004 is powered on, you can press this button to set the zoom level (1X, 2X, and 4X).



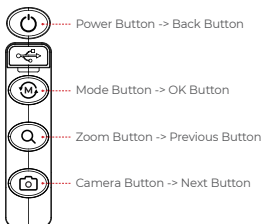
Mode Button

- When TS004 is powered off, you can press this button to turn on or off the LED flashlight.
- When TS004 is powered on,
 - You can press this button to set the pseudo-color palette. (Five palettes are available: Bird, White Hot, Black Hot, Red Hot, and Fusion.)

- You can press and hold this button to activate the system settings.

You can see the system settings menu via the eyepiece. For more information about system settings, please follow the on-screen instructions.

In this case, the functions of these buttons will change as follows.



When TS004 is powered on, you can press and hold these two buttons at the same time to measure the distance between the thermal camera and the object.

4.2 LED Indicator

Indicator Status	Description
Solid green	TS004 is powered on and works well, or TS004 is fully charged.
Solid red	TS004 is being charged.
Flashing green	TS004 is in the standby status.
Flashing red	TS004 battery is running out (< 10%).

4.3 USB-C Port

The USB-C port on TS004 is used for charging and file transfer (via the supplied USB-A to USB-C cable).

4.4 Diopter Adjustment Knob

When you are looking through the eyepiece of TS004, you can turn the knob to adjust the position of the diopter level. This is to optimize the sharpness of the image.

5. Instructions for Use

5.1 Power-on

Press and hold the Power Button for 3 seconds to power on TS004.

After TS004 is powered on, check the battery charge. If it is not enough for the activity that you're going to do, charge TS004 first.

5.2 Charging

TS004 should be fully charged prior to use.

Charge TS004 via the USB-A to USB-C cable. Plug one end into the USB-C port of TS004 and the other end into a USB power source.

It takes about four hours to get TS004 fully charged.

5.3 APP

1. Download and install the APP on your phone, and launch it.



Android & iOS

2. Power on TS004 and connect it to your phone via Wi-Fi.

- 1) Press and hold the Mode Button for 3 seconds.
- 2) Turn on the Wi-Fi switch on the screen.
- 3) Connect TS004 to your phone.

Note: You can just follow the instructions displayed on the APP interfaces for Wi-Fi connection and further operation.

5.4 Pseudo-color Palettes

When you use TS004 to detect objects in the wild, you can choose a suitable pseudo-color palette according to actual situations. Five palettes are available: Bird, White Hot, Black Hot, Red Hot, and Fusion. You can press the Mode Button to toggle between them.

Palette	Description
Bird	Hot objects appear white. This palette is specially designed for detecting birds or similar objects.
White Hot	Hot objects appear white. This palette is suitable for daytime use.
Black Hot	Hot objects appear black. This palette is suitable for nighttime use.
Red Hot	The hottest 10% of things in the image appear red, and everything else is gray.
Fusion	Multiple colors will appear in fusion in the image. It is suitable for both daytime and nighttime use.

5.5 Photos and Videos

In the process of using TS004 for detection, you can take photos and record videos when needed.

- To take a photo, press the Camera Button.
- To record a video, press and hold the Camera Button for 3 seconds.

The photos and videos will be saved on TS004. You can view or transfer them when you connect TS004 to a PC via the USB cable.

5.6 Power-off

After you finish all activities, you can press and hold the Power Button for 3 seconds to power off TS004.

TS004 will automatically shut down when its battery runs out.

6. Specifications

Infrared Camera Resolution	256 x 192
Refresh Rate	50 Hz
Focal Length	13 mm
Spectral Range	7.5~14
Pixel Size	12 μ m
NETD	< 40 mK
FOV	13.5° x 10.1°
IFOV	0.92 mrad
Zoom Level	1X/2X/4X
Storage	32GB
Battery Capacity	5000 mAh
IP Rating	IP67

7. FAQ

Q: Can TS004 detect objects underwater, through glass or through a wall?

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

Q: Can any phone be connected to TS004?

A: Currently, TS004 supports phones with Android 7 or later OS and phones with iOS 12 or later OS.

Q: Is the focus of the camera fixed or adjustable?

A: The infrared camera comes with a fixed focus. The user can turn the diopter adjustment knob to optimize the sharpness of the image displayed in the viewfinder.

Q: How long can I use TS004 to record videos?

A: You can keep recording videos before the battery of TS004 runs out. However, TS004 will automatically save the video every 20 minutes.

Q: How do I view the captured thermal images on a PC?

A: Connect TS004 to a PC via the USB cable, and then you can view the thermal images stored on TS004.

8. Warranty

TOPDON's One-Year Limited Warranty

TOPDON warrants to its original purchaser that the company's products will be free from defects in material and workmanship for 12 months from the date of purchase (Warranty Period).

For the defects reported during the Warranty Period, TOPDON will either repair or replace the defective part or product according to its technical support analysis and confirmation.

TOPDON shall not be liable for any incidental or consequential damages arising from the device's use, misuse, or mounting. If there is any conflict between the TOPDON warranty policy and local laws, the local laws shall prevail.

This limited warranty is void under the following conditions:

- Misused, disassembled, altered or repaired by unauthorized stores or technicians.
- Careless handling and operation's violation.

Notice: All information in this manual is based on the latest information available at the time of publication and no warranty can be made for its accuracy or completeness. TOPDON reserves the right to make changes at any time without notice.

9. FCC Statement

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device was tested for typical body-worn operations. To comply with RF exposure requirements, a minimum separation distance of 0 mm must be maintained between the user's body and the device, including the antenna. Third-party belt-clips, holsters, and similar accessories used by this device should not contain any metallic components. Body-worn accessories that do not meet these requirements may not comply with RF exposure requirements and should be avoided. Use only the supplied or an approved antenna.



TEL

86-755-21612590
1-833-629-4832 (NORTH AMERICA)



EMAIL

SUPPORT@TOPDON.COM



WEBSITE

WWW.TOPDON.COM



FACEBOOK

@TOPDONOFFICIAL



X

@TOPDONOFFICIAL



RoHS



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