TC004

Handheld Thermal Imaging Camera | User Manual

TOPDON

Contents

English

Cautions

Read all instructions before use.

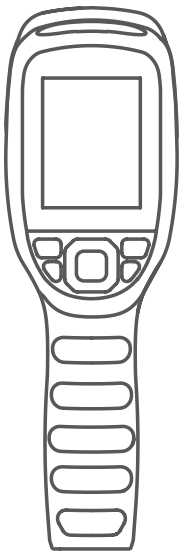
- Do not point the thermal imaging camera at the sun or other strong energy sources for long periods of time, otherwise there might be damage to the detector in the thermal imaging camera.
- Keep the thermal imaging camera away from water to avoid electricity leakage or short circuits.
- Do not touch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

About TC004

TOPDON's TC004 is a 256*192 handheld thermal imaging camera used for equipment inspection and maintenance.

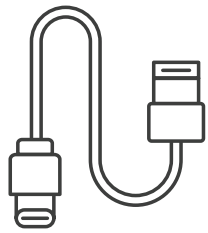
You can apply the camera in home heating, water leak detection, and agricultural protection. It can be used either on its own in standalone mode or in USB mode to work with a Windows-based computer.

Section 1
What's in the Box?



TC004 Thermal Imaging Camera

Power Adapter



USB Cable (Type-A to Type-C)

User Manual

Carrying Bag

Section 2
Product Overview

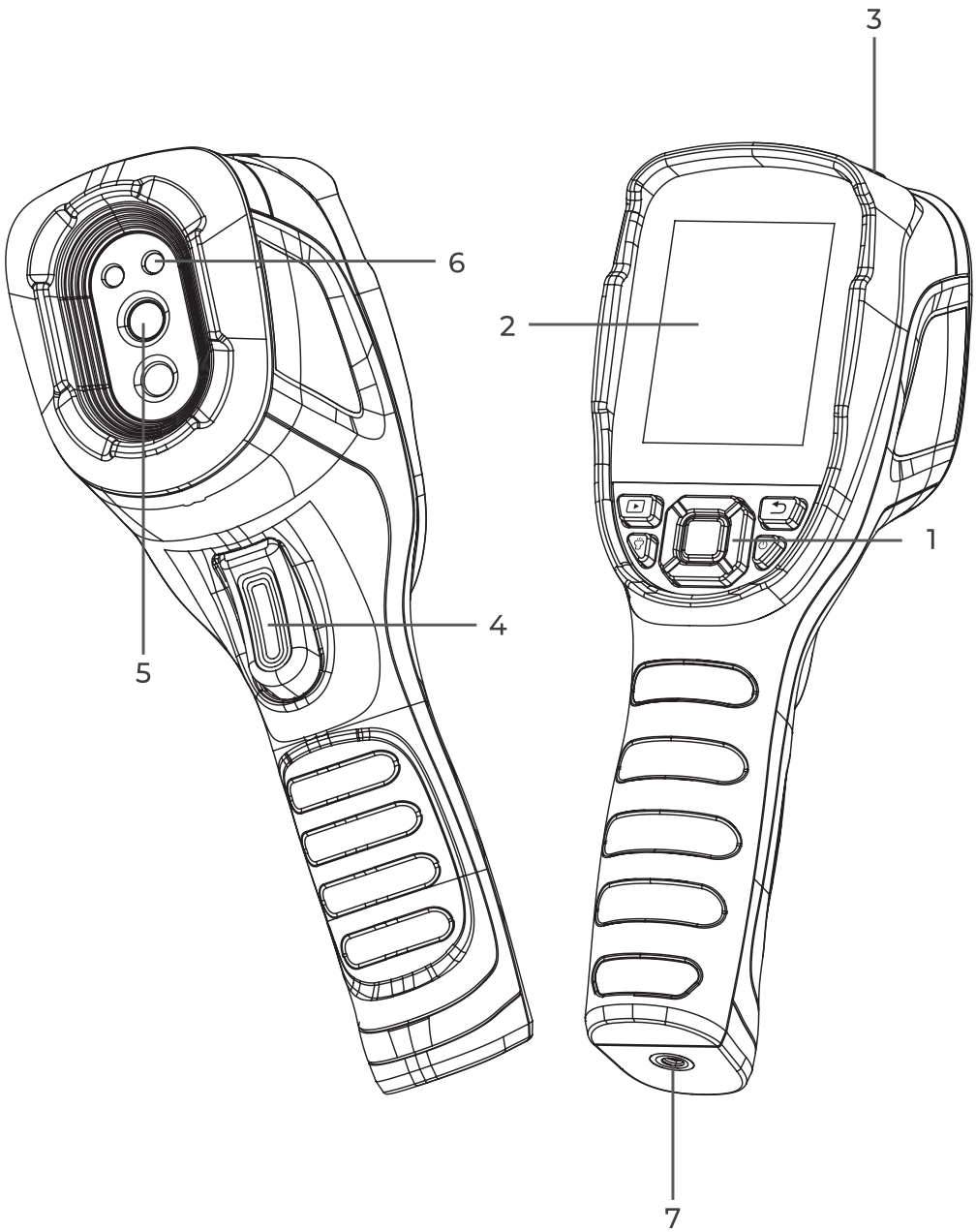
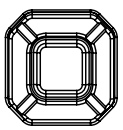


Figure 2.1.1

1. Keyboard

	Power Button	Long press to power ON / OFF
	Return Button	Short press to return to the previous page
	Albums Button	Short press to view saved photos and videos
	Flashlight Button	Long press to turn on / off the flashlight
	Move Up / Down / Left / Right Buttons	Short press to move to the desired direction
	OK Button	Short press to show the pop-out navigation menu; short press again to confirm an action or message

2. 2.8-Inch Screen

3. USB Type-C Port & SD Card Slot

Type-C port is used for charging, screen projecting to PC, and file transfer

4. Camera Button

Short press to take a photo, then short press the ***OK Button*** to save the photo; long press to start recording a video, short press to stop recording, then short press the ***OK Button*** to save the video.

*Note: You can also choose to automatically save all the photos taken on your TC004 device. To enable the function, go to **Setting > Photo Setting**, and turn on **Photo Auto Save**.*

5. Infrared Camera

6. Two LED Flashlights

7. Screw Hole (1 / 4-20 unc)
Mounts the TC004 onto a tripod

Section 3
Using TC004 in Standalone Mode

While in standalone mode, the TC004 thermal imaging camera can work independently on its own. To learn more about the operation of each button and port on the TC004 device, you can refer to ***Section 2 Product Overview.***

Section 4
Using TC004 in USB Mode

Apart from standalone use, your TC004 can also work with a Windows-based computer. This section illustrates how to configure your TC004 to work with a Windows-based computer for screen projecting and imagery analysis.

Getting Started

1. ***Download and install the TDView software***
   Go to www.topdon.com/products/tc004, click “Download” to enter the download page. Then download and install the TDView software to your computer.

2. Connect TC004 to your computer with the supplied USB cable (see Figure 3.1.1).

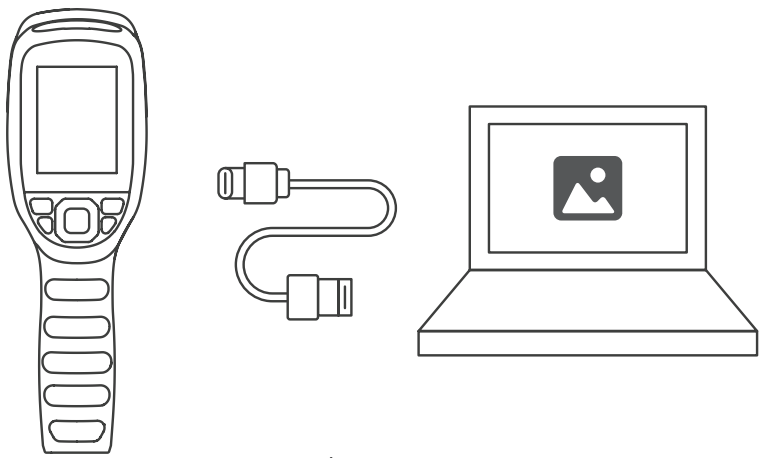


Figure 3.1.1

Project Your TC004 Screen to PC

1. To project your TC004 screen to PC, you need to switch your TC004 to USB mode first (Go to ***Setting > System Setting,*** and tap ***Using Mode*** to switch to USB mode).

2. Open the TDView software and you can screen project your TC004 thermal imaging camera to PC.

Imagery Analysis on PC

Once your TC004 is connected to PC via the supplied USB cable, you can send files (both ***JPG*** and ***IRG*** format files required) to the PC and conduct imagery analysis with the TDView software.

Note: Screen projecting and imagery analysis features cannot be available at the same time.

Section 5
Specifications

Resolution of infrared camera	256*192
Spectral range	8 to 14 μm
Pixel size	12 μm
NETD	< 40 mK
FOV	52.5°x 39.5°
IFOV	3.85 mrad
Measurement range	-4° to 662°F (-20° to 350°C)
Measurement accuracy	±2°C or ±2% of reading, the larger value shall prevail
Measurement resolution	0.1°C
Storage capacity	2 GB RAM + 16 GB internal storage
Battery capacity	5,000 mAh

Section 6
FAQ

Q **Can the TC004 detect objects underwater, through glass or a wall?**

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

Q **Why is there a lower temperature reading when the device gets far from the object and a higher reading when the device gets closer to the object?**

A 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 ***Setting > Measure Parameter > Distance***, and input the actual distance (max: 5 meters) to get the corrected temperature.

Q **Why is the measured temperature not very precise?**

A The temperature resolution of TC004 is ±2%. And the TC004 provides a normal temperature range of -4 to 302°F (-20 to 150°C), and a high temperature range of 302° to 662°F (150 to 350°C). Please select the corresponding range in the app before measuring.

Q **What external factors will affect the infrared temperature measurement?**

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

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.

Section 7
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 / or improper operation.

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.

Section 8
FCC

This device complies with Part 15 of the FCC Rules. Its 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 B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by one or more of the following measures:
• Reorient or relocate the antenna.
• Increase the distance between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from the one connected to the receiver.
• Consult a dealer or an experienced radio / TV technician for help.