

TOPDON®



TC004 & TC005

See More Than The Human Eye



Thermal Imager

Contents

01

Brief

02

Specs

03

Features

04

Added Benefits
For TC005

05

Functions

06

What's
In The Box?

07

Comp Chart

08

FAQs

Specs

Features

Added Benefits
For TC005

Functions

What's In
The Box?

Comp Chart

FAQs



TC004 & TC005

TOPDON's handheld Thermal imaging wands offer incredibly broad temperature range and accuracy, equipped to handle nearly any thermal diagnostics job. The TC004 is handheld thermal camera that measures an expansive temperature range from -20°C to $+350^{\circ}\text{C}$ (-4°F to $+662^{\circ}\text{F}$), and offers a 12-hour runtime. The 256*192 pixel infrared camera ensures hi-res imaging. The tool is ready for analysis with the standalone and the PC modes, enabling users to analyze pictures accurately with professional software. Added benefits of the TC005 include seven options for Pseudo-Color Display, improved range (-20°C to $+550^{\circ}\text{C}$), a 2-megapixel visible light camera for overlapping images, and a picture-in-picture mode.

With IP54 water protection and a 2 meter (6.6 ft.) drop-proof design, the thermal imager provides a simple, professional and efficient solution for electrical diagnosis, home maintenance, mechanical equipment maintenance, construction inspection, agriculture, and care of livestock.



Specifications



Dimensions:

9.45" x 2.76" x 3.54" (240 x 70 x 90mm)

Weight:

18.3 oz (520g)

Screen Size:

2.8-inch Display (7.1 cm)

Parameters

Storage Temp:

14°F to 131°F (-10 to +55°C)

Working Temp:

14°F to 122°F (-10 to +50°C)

Resolution:

256x192 Pixels

Object Temp. Range:

TC005: -4°F to +1022°F (-20 to 550°C)

TC004: -4°F to +662°F (-20 to 350°C)

Spectral Range:

8 – 14µm

Image Frequency:

20 Hz

Focal Length:

0.12 in. (3.1 mm)

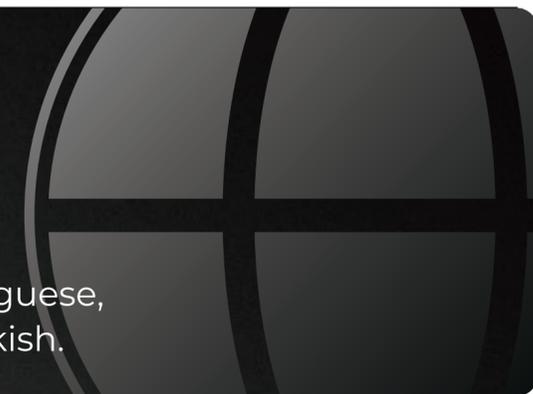
Heat Sensitivity:

40mk

Multilingual Support

13 Languages:

English, Chinese (Traditional), Korean, Japanese, French, Spanish, Italian, Portuguese, German, Polish, Russian, Hungarian, Turkish.



Brief

Specs

Features

Added Benefits
For TC005

Functions

What's In
The Box?

Comp Chart

FAQs

Improved 256*192 Thermal Resolution

With an ultra-high IR resolution camera 256*192, the TC004 and TC005 allow users to read and display temperatures with superior detail and clarity.

Say goodbye to blurry images. A thermal image with unmatched clarity helps you locate the inadequate insulation on house inspections or a parasitic drain on a car battery with ease.



Brief

Specs

Features

Added Benefits
For TC005

Functions

What's In
The Box?

Comp Chart

FAQs

Improved Measurement Range And Accuracy

The TC004 features a wide temperature measurement range of $-20^{\circ}\text{C} \sim +350^{\circ}\text{C}$ ($-20^{\circ}\text{C} \sim +550^{\circ}\text{C}$ for the TC005). Each tool can effectively measure temperatures with $\pm 2^{\circ}\text{C}$ accuracy for precise temperature measurements.

NETD of this high-precision infrared sensor is less than 40mK and thermal imaging resolution displays down to 0.1°C . The tool's margin of error is less than 2%. This is to ensure the upmost accurate thermal readings.



Brief

Specs

Features

Added Benefits
For TC005

Functions

What's In
The Box?

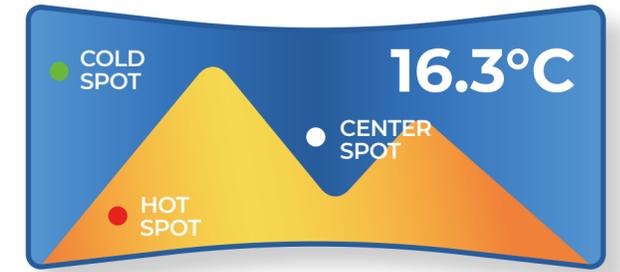
Comp Chart

FAQs

Three Measurement Modes

The TC004 and TC005 have three different measurements to detect temperature. They are the central point of the screen and the highest and lowest temperatures on a detected area. (center spot, hot spot, and cold spot).

The pseudo color bar on the right side of the screen will display the highest and lowest temperatures of the target area.



Brief

PC Image Analysis And Instant Projection

TOPDON offers professional image-analysis software for free, allowing users to analyze pictures and videos clearly on a PC.

The TC004 and TC005 also supports screen projection on a PC as well, connect this thermal camera to the PC to measure temperature changes in real-time.

Specs

Features

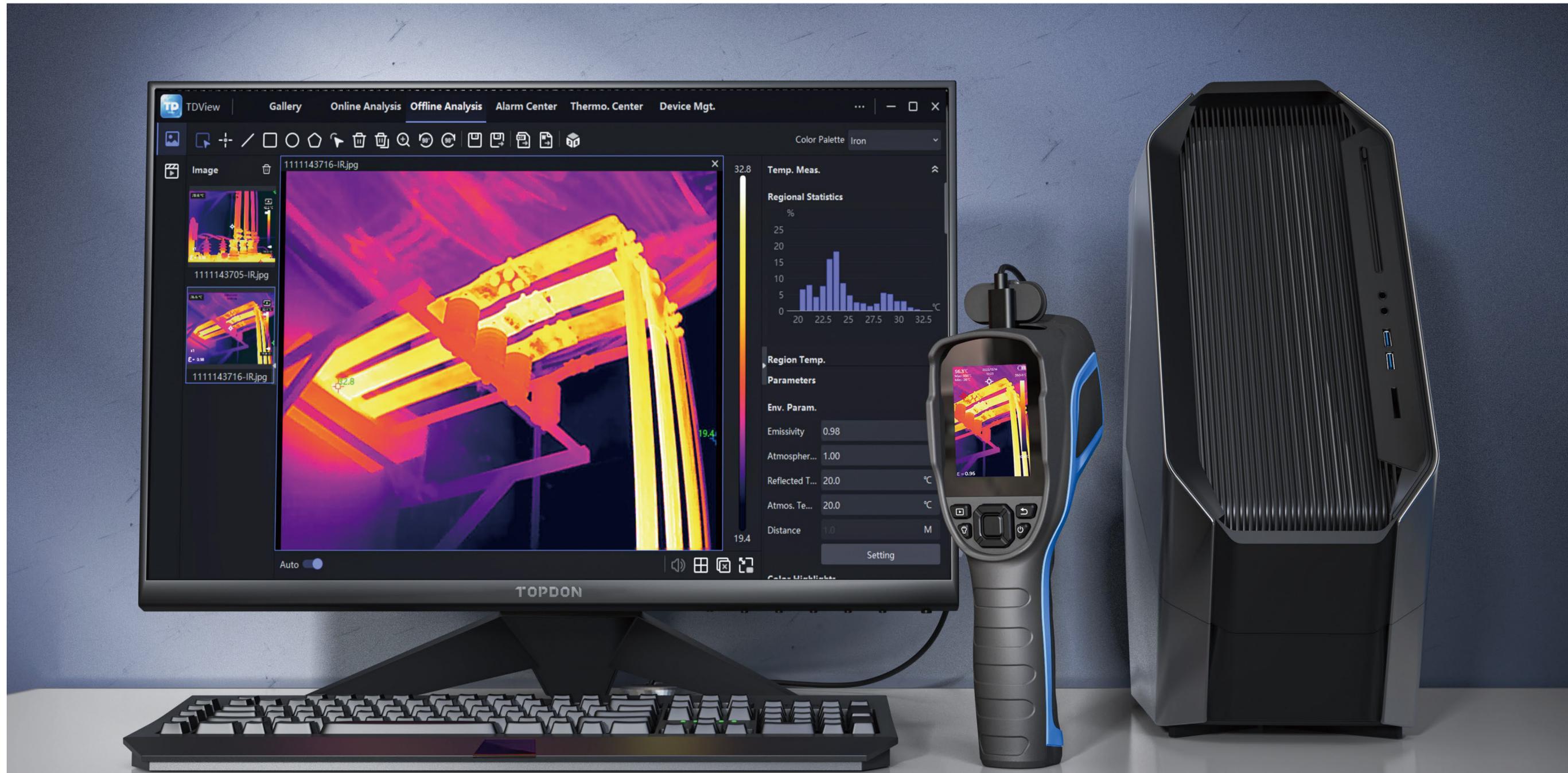
Added Benefits
For TC005

Functions

What's In
The Box?

Comp Chart

FAQs



Brief

Wide FOV

These handheld thermal cameras also feature a wide 56° FOV to easily capture more objects in view. There is also no need to adjust focal length.

Specs



Features

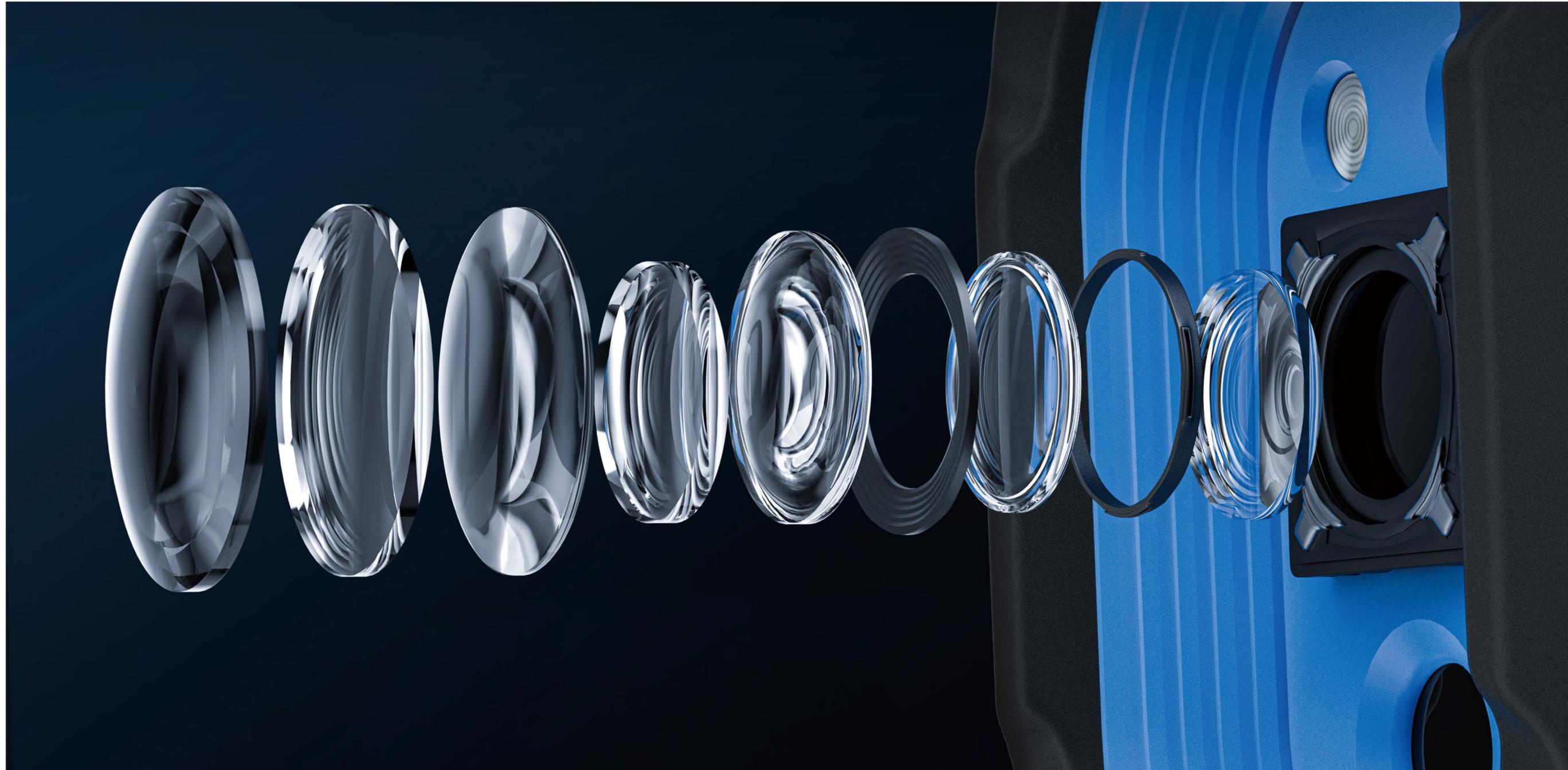
Added Benefits
For TC005

Functions

What's In
The Box?

Comp Chart

FAQs



Brief

All-Day Runtime

A powerful integrated battery gives the TC004 and TC005 a 12-hour runtime. TOPDON's handheld thermal camera comes with a 5000mAh rechargeable battery to keep up with your longest work days. Perfect for working outdoors.

Specs



Features

Added Benefits
For TC005

Functions

What's In
The Box?

Comp Chart

FAQs



Brief

Powerful LED Light

A built-in LED light allows users to record thermal readings without an additional light source. The TC005's LED light helps to capture clearer images with the traditional camera.

Specs

Features

Added Benefits
For TC005

Functions

What's In
The Box?

Comp Chart

FAQs

LED LIGHT



Brief

Compact And Solid Design

The IP54 rated product is prepared to handle water and dust. A 2m (6.6 ft.) drop proofing allows you to be more carefree while using the device.

Specs

IP54

Features

Added Benefits
For TC005

Functions

What's In
The Box?

Comp Chart

FAQs



Brief

Four Imaging Modes

Equipped with infrared and visible cameras, the TC005 can combine the IR images and visible images to display the temperature in more detailed pairings: thermal imaging, dual-light integration, visible light, and picture-in-picture.

Visible camera make it easier to identify shapes you're seeing on the screen or to pinpoint the source of a problem.

7 color palettes allow users to read temperature differences in a scene with gradient colors of their choice.

Specs

Features

**Added Benefits
For TC005**

Functions

What's In
The Box?

Comp Chart

FAQs



Brief



Functions

Specs

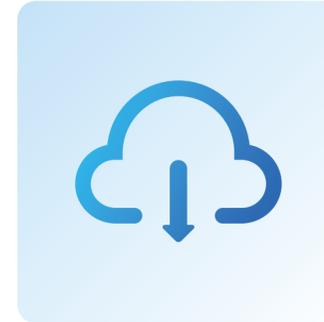
Features



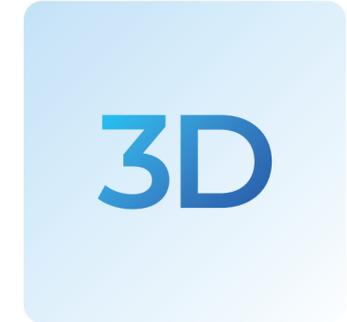
Adjust ambient temp, distance to spot, and emissivity to read temperature more accurately.



Support Photo And Video Recording.



Data Export: Record Temperature for Each Pixel.



Display Temperature Changes in 3D.

Added Benefits For TC005

Functions



Mounts On A Tripod For A Stable View.



High And Low Temperature Alarm.



Monitor Temperature Change by Waveform Graphs.



2GB Memory with 16GB SD Card.

What's In The Box?

Comp Chart

FAQs

Brief



What's In The Box?

Specs

Features

Added Benefits
For TC005

Functions

**What's In
The Box?**

Comp Chart

FAQs

<p>Thermal Camera</p> 	<p>Storage Bag</p> 	<p>16G Memory Card</p>  <p>x 1</p>	<p>USB Data Cable</p>  <p>x 1</p>
		<p>User Manual</p>  <p>x 1</p>	<p>5V Power Adapter</p>  <p>x 1</p>

MODEL	TC001	TC002	TC003	TC004	TC005
SPECIFICATIONS					
Display screen	NA	NA	5-inch, 854*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
Package 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	2-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, Thermal Fusion, Outline Fusion	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	20Hz	
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(0.25m)	3.2mm(0.25m)	3.2mm(0.25m)	3.2mm(0.25m)	
Tripod screw hole	/	/	Yes	Yes	
Drop, impact, and vibration	2m	2m	1.5m	2m, impact 25g (IEC 60068-2-27), vibration 2.5g (IEC60068-2-6)	
Waterproof	/	/	IP54	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)	

Brief



FAQs

Specs

Question

Can the TC004/TC005 detect objects underwater, through glass or a wall?

Answer

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

Question

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?

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 My Profile > Temperature Correction > Distance to Spot, and input the actual distance (max: 5 meters) to get the corrected temperature.

Features

Added Benefits
For TC005

Functions

What's In
The Box?

Comp Chart

FAQs

Brief



FAQs

Specs

Question

Features

Why is the measured temperature not very precise?

Answer

Added Benefits
For TC005

The temperature accuracy of TC005 is $\pm 2\%$. And the TC005 provides a normal temperature range of -4 to 302°F (-20 to 150°C), and a high temperature range of 302°F to 1022°F (150 to 550°C). Please select the corresponding range before measuring.

Functions

Question

What external factors will affect the infrared temperature measurement?

Answer

What's In
The Box?

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.

Comp Chart

FAQs

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