



P-Series

USERS MANUAL

1 Getting Thermal Master APP

  Thermal Master 

 iPhone & iPad (Type-C)
 Phones & Tablets (Type-C)

 ≥ iOS 14.0 Android 7.0

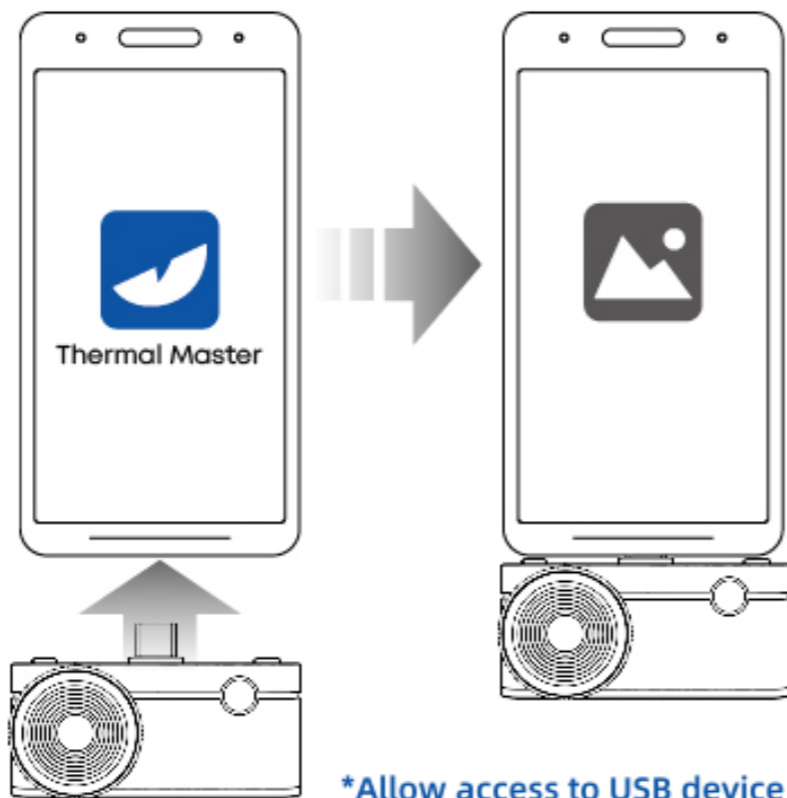


 Download iOS APP




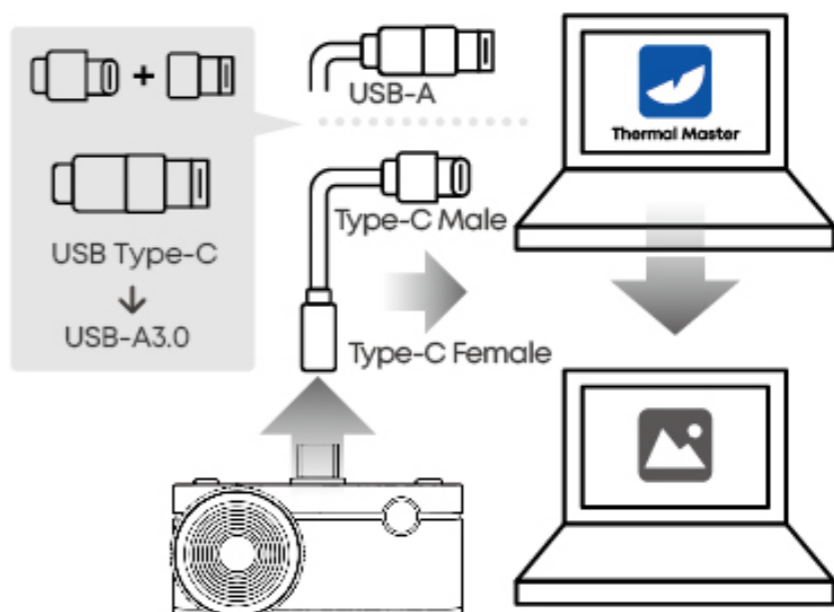
 Download Android APP

2 Connection



3 Using Thermal Master PC Analyzer

 <https://thermalmaster.com/pages/download-center>



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Precautions for Safe Use

- Please protect the device from vigorous vibration, or impacts by falling objects, and keep the device away from magnetic field interference.
- Do not aim the lens at a strong thermal light source, such as the sun or other high-temperature targets, to avoid damage to the lens or thermal imaging detector.
- Please keep it properly after use. To prevent device failure, disassembling the device shell without permission is strictly prohibited.
- The lens and the interface connector are prone to damage. Do not knock, pry, puncture, or scratch them.
- Do not use the product in extremely cold, extremely hot, dusty, or high-humidity environments. The recommended service temperature is $-10^{\circ}\text{C}\sim+55^{\circ}\text{C}$.
- Please restore the device in a dry, non-corrosive gas environment and away from direct sunlight.
- Please keep the packaging materials properly in case you need to return the device to the Agent or send it back to the manufacturer in its original package if issues arise.
- If the device fails, please contact the Agent from whom you purchased the device or reach out to our after-sales service office (refer to the last page of this booklet for details). Do not disassemble or modify the device in any way. We assume no responsibility for any problems caused by unauthorized modifications or repairs.

1. Product Overview

Thermal Master P series combining an advanced VOx thermal infrared detector with a self-developed ASIC chip. Its advantages include compact size, light weight, low power consumption, and high performance. You can connect it directly to the cellphone, Pad, Computer or Laptop for plug-and-play accurate measurement.

2. Operating Instructions

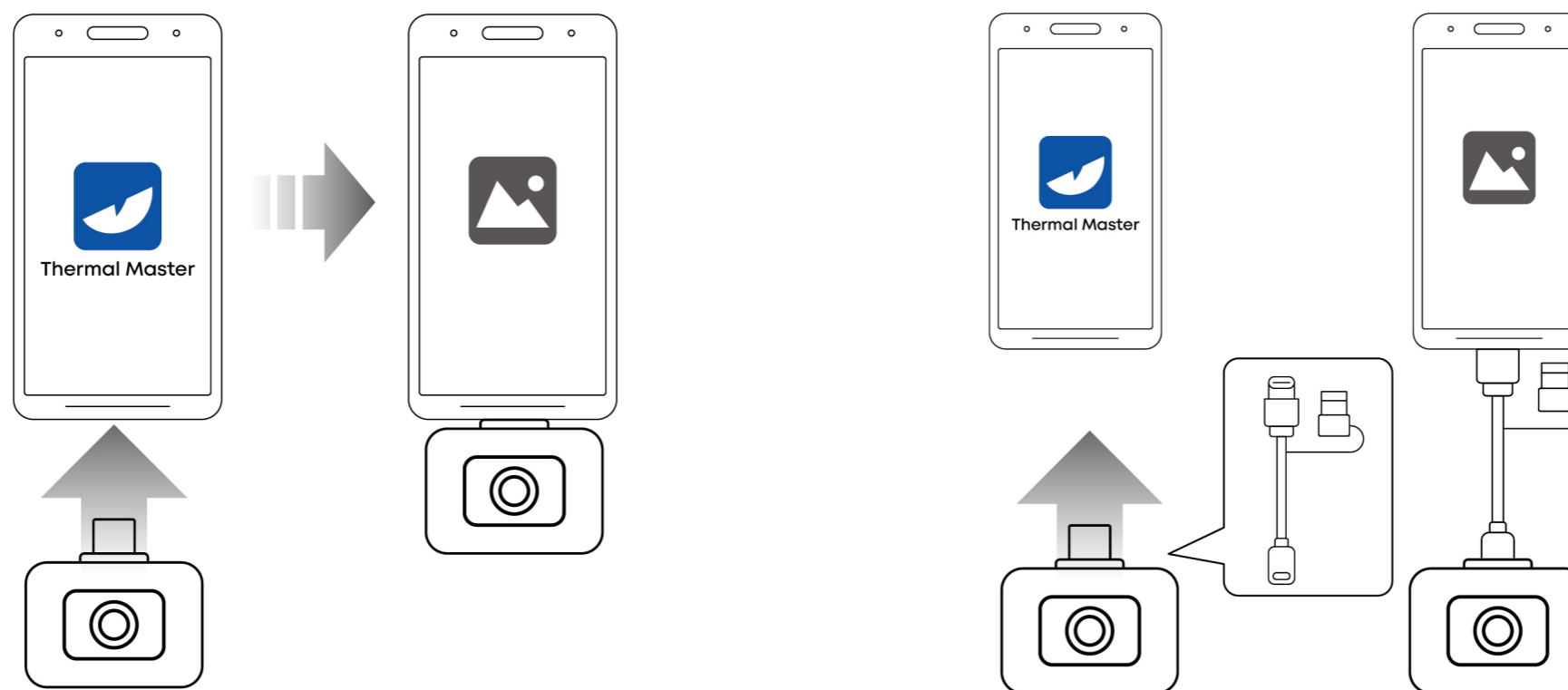
2.1 Using with a Mobile Device

Download Thermal Master application from your preferred app store, and then install it on your phone. Alternatively, you can go to <https://thermalmaster.com/pages/download-center>, or Scan below QR code to download and install the application.



Launch the Thermal Master application.

Connect the camera to your mobile device directly via the USB-C connector or using the supplied multifunctional adapter cable.



The onboarding of Thermal Master APP will guide you and help you setup the permissions for the application. The application will open in Photo mode automatically when the needed permissions have been allowed.

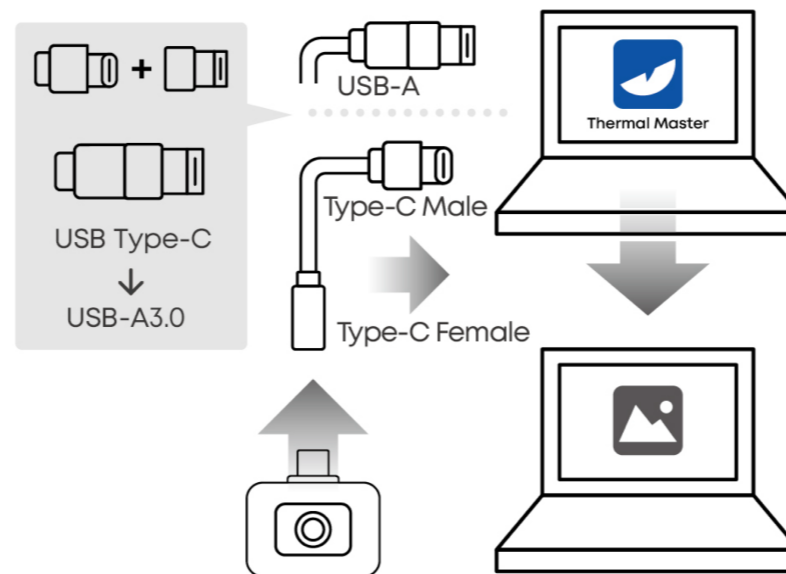
For detailed instructions on operating with a mobile device, please refer to the user manual of Thermal Master by going to Settings > Users Manual.

2.2 Using with a Computer

Download the software from the website <https://thermalmaster.com/pages/download-center>, and enter the Download page to install it or by scanning the QR code below.



Connect camera to a Windows-based computer using the supplied adapter cable.



Launch the software, and you can conduct thermal analysis.

3.Specifications

Model	P1	P2	P2PRO	P2MAX	P3	P4
X ³ IR™ Resolution	320×240	512×384	512×384	512×384	512×384	512×384
Detector	VOx160×120 @12μm	VOx 256×192 @12μm				
Visual Resolution	/					1280×960
Measurement Range	-4°F~1112°F (-20°C~600°C)					
Temp Accuracy	±2°C (±2% of reading)	±1.5°C (±1.5% of reading)	±2°C (±2% of reading)			
NETD	<40mK				≤35mK	
Razor X™	Patented AI image algorithm					
Battery Life	300~480 min					200~300 min
Frame Rate	25Hz					
Palettes	12 Palettes (white hot/ black hot/ iron red/ red hot + 8 other palettes)					
Colorbar Tech	Highlight temperature target					
Temperature Correction	Emissivity, Distance, Environmental temperature					
Professional Analysis	Secondary point/ line/ plane data analysis					
Adaptation Method	Smartphone/Tablet/Computer/Laptop					
Thermal Master Sensor	2nd Generation ASIC/ IQ+/ AI TEMP					
Focusing Mode	Fixed Lens	Fixed Lens	Magnet Macro Lens	Magnet Macro Lens(Optional)	Manual Focusing Lens	Fixed Lens
FOV	52°(H)×39°(V)	56.0°(H)×42.2°(V)	56.0°(H)×42.2°(V)	56.0°(H)×42.2°(V)	40°(H)×30.2°(V)	56.0°(H)×42.2°(V)
Size	59×31×9(mm)	31×21×9.8(mm)	27×18×9.8(mm)	59×32×13(mm)	57×27×17.2(mm)	53×29×11(mm)
Operating Temperature	5°F~131°F (-15°C~55°C)					
Storage Temperature	-40°F~185°F (-40°C~85°C)					
App Name	Thermal Master					
Compatible Mobile Models	Type-C for Android & iOS	Android	Android or iOS	Type-C for Android & iOS	Type-C for Android & iOS	Android

Note: The parameters are updated on March 28, 2025, and are subject to change without notice.
 Note: The above temperature measurement parameters are obtained in the laboratory environment.

4. Software Function

Scan below QR code to access software functions in details:



5. FAQs

① Why does Thermal Master not respond after being plugged into the phone?

Please troubleshoot in this order:

- a) Ensure that your phone runs with Android 6.0 at least
- b) Verify that the OTG option is available on your phone and is enabled. If you are using OPPO, vivo, OnePlus, realme, or iQOO, search "OTG" in Settings and manually turn it on. This function is automatically turned off after 10 minutes of inactivity. On most other phones, OTG is turned on by default and can be used directly.
- c) Ensure that you have downloaded the Thermal Master app and granted all permissions required by the app.
- d) Unplug and plug in the product. If it still does not respond, contact our after-sales staff.

② Is it normal to always hear a "click" sound inside after connecting the thermal camera?

Yes, it is. This is the shutter sound of the thermal camera to refresh the image (also called correction). For the blurred image, click it manually for a clearer image and more accurate temperature measurement. When the device is just connected to the mobile phone, the shutter will sound several times. After being used for a few minutes, the inside of the device reaches the thermal balance, and the shuttering frequency will decrease

③ Why is my screen upside down or in an incorrect direction?

Our app supports 90-degree rotation in four directions and mirror adjustment. You can tap the Settings button on the home screen to enter the menu for operations.

④ What should I do in the event of a blurry screen?

Given the operating characteristics of uncooled infrared detectors, you need to refresh the screen using the shutter, that is, tapping the Shutter icon. This helps produce clearer images.

⑤ Can I use the camera to observe objects underwater, outside glass windows, under clothes, or under the skin?

This camera mainly detects an infrared wavelength range of 8~14um. So it cannot observe objects through water or ordinary glass and can only measure temperatures on the surfaces of clothes and skin.

⑥ Does thermal camera pose radiation hazards to the human body?

No. The camera does not actively emit any hazardous radiation but only collects the heat information of objects. It can be used with peace of mind.

⑦ How should I increase accuracy in temperature measurement?

a) Correct distance, ambient temperature, humidity, reflected temperature, and emissivity (the emissivity table of common objects is available in App settings)

b) Select products with appropriate focal lengths. The larger the focal length, the longer the detection distance (because the ability of the atmosphere to absorb infrared waves is that the longer the distance, the greater the energy attenuation, and the lower the accuracy of temperature measurement)

⑧ Why does my screen have horizontal, vertical, or wavy lines or ghost images?

It is generally caused by poor interface contact or external electromagnetic interference of the signal. You can solve the problem through the following steps:

a) Restart the mobile phone, unplug and reconnect the thermal camera

b) Directly connect to the mobile phone or connect with an extension cable

c) Test with another mobile phone. If the problem persists, return the device to the after-sales service for troubleshooting.

6. Product Services

6.1. Service Commitment

Thermal Master Technology Co., Ltd. is committed to providing quality training, maintenance, and technical support for customers. The Company wishes to maintain a long-term relationship with the customers. It continues to offer systems of the latest version and effective, timely support, retraining, and consulting services based on customer needs to help maximize customers' economic benefits.

6.2. After-Sales Contact

Email: support@thermalmaster.com

Tel: +1(281) 652-7490

Website: www.thermalmaster.com



(Official website)



(After-sales service)

7. Warranty Certificate

Warranty Card

Dear user,

We will offer a two-year free repair or replacement service for any device failure under normal use.

The term "failure under normal use" generally refers to product defects from the factory or natural wear and tear caused by the user's normal use without intentional or negligent factors, excluding failures or damages due to any improper operation, unauthorized disassembly, or violation of the Precautions for Safe Use.

In case of any fault of your purchased product, please return it to the Agent in time or contact our after-sales service directly.

The warranty would be void if the users themselves disassemble or modify the devices within the warranty period.

Thermal Master Technology Co., Ltd.

May 2024

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