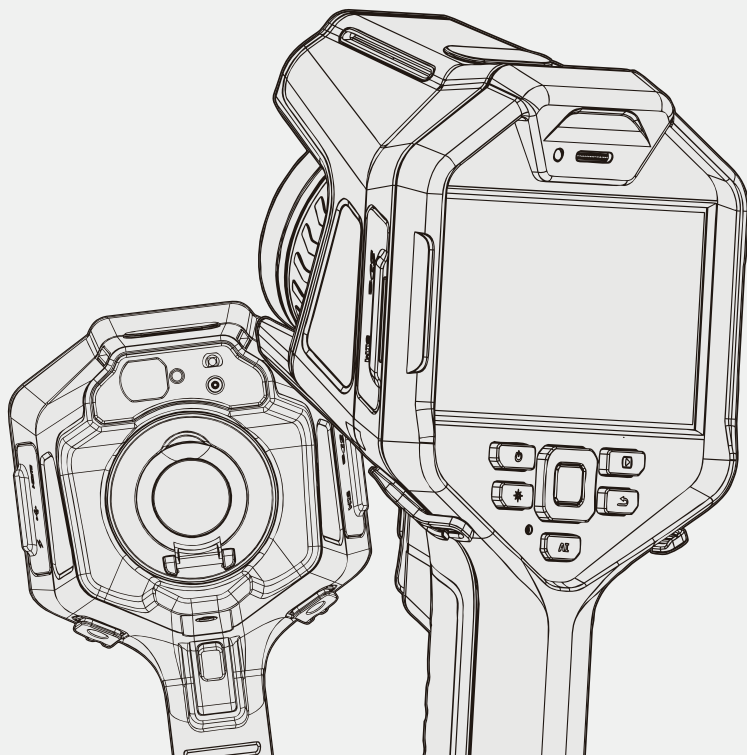


Quick Start Manual

Fotric 340A Series/340M Series



FOTRIC
— Thermal Intelligence —

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Legal Disclaimer

1.1 Legal Disclaimer

Uncooled thermal imaging products manufactured by FOTRIC are warranted with the assurance of after-sales service provided by FOTRIC from the date of initial purchase and delivery, provided such products must be handled under normal storage, use, and repair conditions and in accordance with FOTRIC operating instructions.

Uncooled thermal imaging manufactured by FOTRIC are entitled to 1-, 2-years warranty (depending on the specific model) from the date of initial purchase and delivery. Warranty covers defects caused by materials and production processes, provided that such products are handled under normal storage, use, and repair conditions and in accordance with FOTRIC instructions.

Products not manufactured by FOTRIC but included in the system that FOTRIC sells to the original purchaser are covered by the specific supplier's warranty terms (if any) and FOTRIC is not liable for those products. This warranty is provided to the original purchaser and is not transferable. This warranty does not apply to any product that has been damaged by misuse, neglect, accident, or abnormal operating conditions. Consumable parts are not covered by this warranty.

Any defects in the products covered by this warranty must be reported and the product must not be used to prevent further damage. The purchaser must report any defects to FOTRIC immediately, otherwise this warranty will not apply.

If the product is proven defective in relation to materials or manufacturing

Legal Disclaimer

after FOTRIC's inspection, it is up to the user whether it is to be repaired free of charge or replaced, provided that the product must be returned to FOTRIC within 3 Months from above mentioned report date. FOTRIC has no obligation or liability for any defects other than those mentioned above. This product is exempt from any other warranties, expressed or implied. FOTRIC hereby disclaims any implied warranties of merchantability and applicability for a particular purpose. FOTRIC is not responsible for any direct, indirect, special, incidental or consequential loss or damage based on contract, civil, or any other legal theory. This warranty clause shall apply the relevant provisions of the laws of the People's Republic of China. Any dispute or claim arising out of or related to this warranty shall be finally settled through arbitration in accordance with the rules of the Shanghai Pudong New District People's Court of the People's Republic of China. The place of arbitration shall be Shanghai.

1.2 Usage Statistics

FOTRIC reserves the right to collect anonymous usage statistics to help maintain and improve the quality of the software and services provided.

1.3 Copyright

No parts of this software (including source code) may be reproduced, transmitted, transcribed, or translated into any kind of language or computer language in any form or by electronic, electromagnetic, optical, manual ways, or any other means without the prior written permission of FOTRIC.

No parts of this document may be reproduced, photocopied, reprinted, translated, or transmitted to any readable electronic medium or machine

Legal Disclaimer

without the prior written consent of FOTRIC.

The names and logos shown on the products herein are either registered trademarks or trademarks of FOTRIC and/or its affiliates. All other trademarks, trade names or company names referenced herein are for identification purposes only and are the property of their respective owners.

1.4 Quality Assurance

The quality management system for the development and production of these products in FOTRIC has been certified in accordance with the ISO 9001 standard.

FOTRIC is committed to a policy of continuous development, so we reserve the right to modify or improve any product without prior notice.

1.5 Export Control

Thermal imaging products are listed as export-controlled products by the U.S. Department of Commerce, United Nations Security Council (UNSC), and European Union (EU). This product contains a focal plane array and cannot be used in controlled countries (such as North Korea, Iran, Syria, Cuba, Sudan, Russia, etc.), so please do not bring this product into or used in controlled countries. Any loss or liability arising from the above actions will be borne by you.

Safety Information

This product complies with the restrictions for Class A digital equipment in Chapter 15 of the FCC Rules. These restrictions are designed to prevent harmful interference to civilian installations. If not installed and used in strict accordance with the instructions, this equipment will generate, use and emit radio frequency energy, which may cause harmful interference to radio communications.

Definition

!Warning > Represents a hazardous situation or behavior that could result in personal injury or death.

!Caution > Represents conditions or actions that could result in damage to the instrument or permanent loss of data.

!Notice > Represents useful information for users.

Important information

Please read before using the equipment :

!Warning > This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

!Warning > Do not disassemble or do a modification to the battery of the thermal imager. The battery contains safety and protection devices, which, if damage occurs, can cause the battery to become hot, or cause an explosion or an ignition. If there is a leak from the battery and you get the

Safety Information

fluid in your eyes, do not rub your eyes. Flush well with water and immediately get medical care. The battery fluid can cause injury to your eyes if you do not do this.

!Warning > The thermal imager is equipped with a laser pointer. Do not look directly into the laser beam. The laser beam can cause eye irritation.

!Caution > The thermal imager uses a very sensitive thermal sensor, do not point the infrared camera (with or without the lens cover) at strong energy sources, for example, devices that cause laser radiation, or the sun. This can have an unwanted effect on the accuracy of the camera. It can also cause damage to the detector in the camera.

!Caution > Original packing box must be used during transportation. Please do not strongly hit the thermal imager during use and transportation.

!Caution > When storing the thermal imager, it is recommended to use the original packing box and place it in a cool and dry place, away from strong electromagnetic field.

!Caution > Please avoid oil and various chemical substances to contaminate or damage the surface of the lens. Please cover the lens with cap after use.

!Caution > Do not use the camera in temperatures higher than +50°C (+122°F), unless other information is specified in the user documentation or technical data. High temperatures can cause damage to the camera.

!Caution > In order to prevent potential risk of data loss, please copy

Safety Information

(back up) the data to a computer periodically.

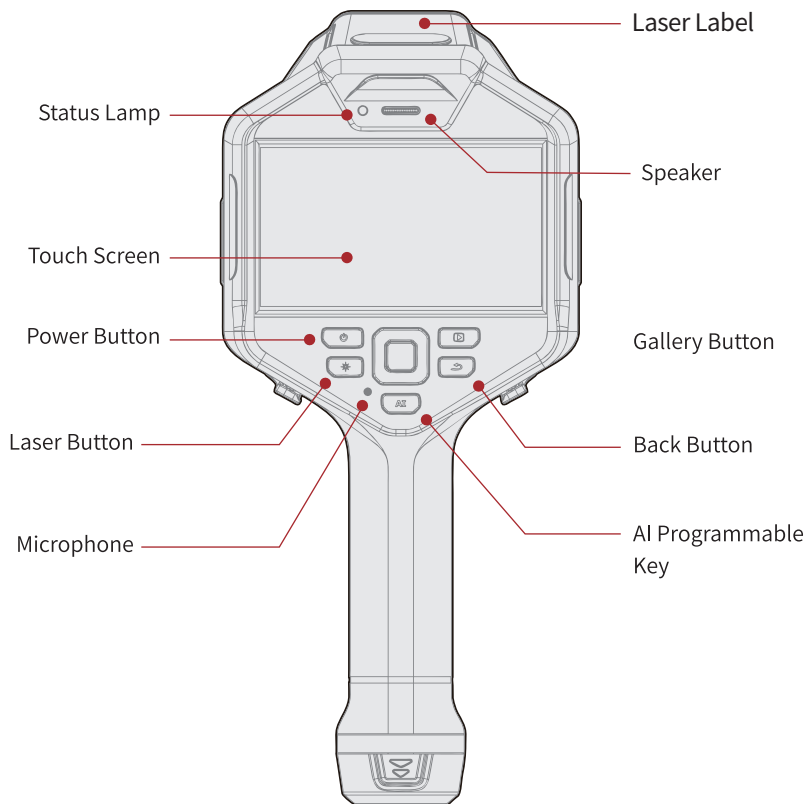
!Caution > Please do not open the thermal imager's shell or modify it without permission. Repair services can only be performed by authorized FOTRIC personnel.

!Notice > After the thermal imager is turned on, it may take about 5-10 minutes to warm up before accurate measurement.

!Notice > Every thermal imager's temperature correction has been performed before delivered from factory.

Thermal Image

Front View



Thermal Image

Rear View

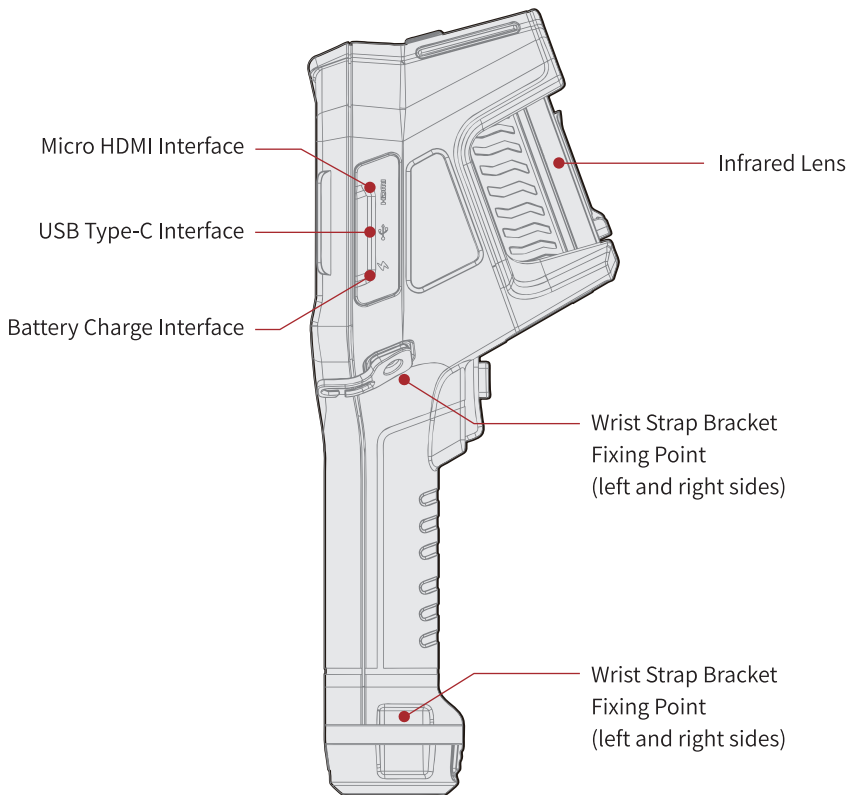


Instructions:

* Limited to specific models, see product parameters for details.

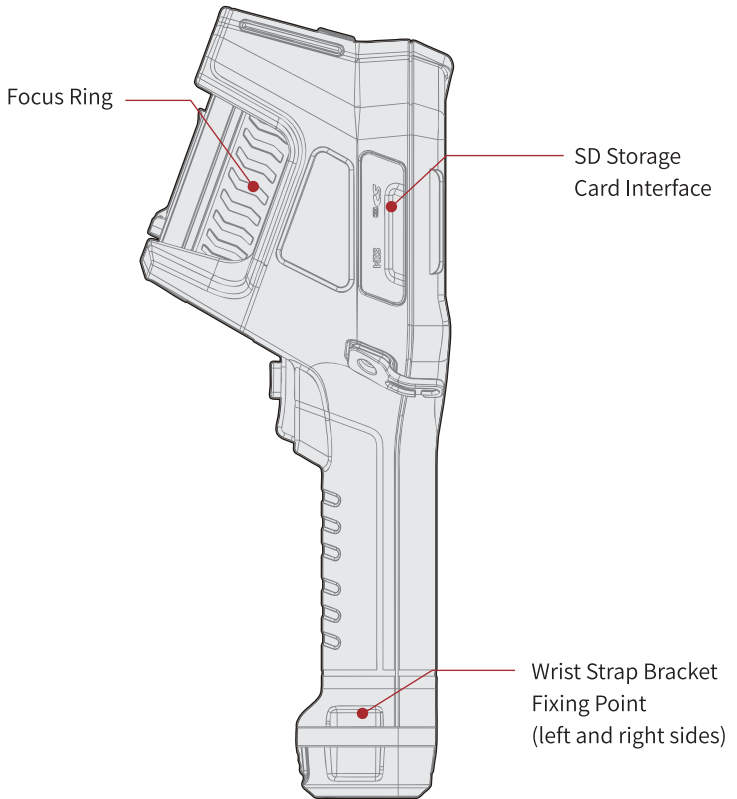
Thermal Image

Right View



Thermal Image

Left View



Laser distance Ranger and laser pointer

1. General

The laser distance ranger consists of a laser transmitter and a laser receiver. The laser distance ranger determines the distance to a target by measuring the time it takes for a laser pulse to reach the target and return to the laser receiver. This time is converted to a distance, which is displayed on the screen.

The laser receiver also works as a laser pointer. When the laser distance ranger is on, you will see a laser dot approximately at the target.

2. Laser warning label

A laser warning label with the following information is attached to the camera:



3. Laser rules and regulations

Wavelength: 635 nm. Maximum output power: 1 mW.

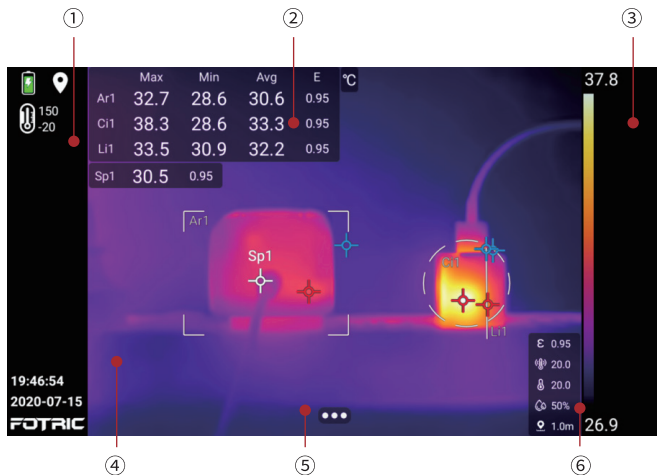
This is Class 2 Laser Product.

Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

Caution: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Interface Introduction

Main Menu



① Status Bar

Display reminder icons such as battery, wifi, low SD card capacity, laser warning, time, logo, etc.

② Measurement Result Table

Display overall and area temperature, emissivity, and other values.

③ Palettes and Temperature Scale Display

Display the color band of the palette, and the upper and lower limits of the temperature scale.

Interface Introduction

Main Menu

④ Image Display

Display real-time thermal image, digital, PIP, T-DEF images, videos, measurement tool, and other values.

⑤ System Menu

Enter temperature scale, temperature measurement parameters, image mode, ROI measurement tools, color palette, and settings.

⑥ Temperature Measurement Parameters

Display emissivity, reflected temperature, ambient temperature, relative humidity, distance and other parameters.

Interface Introduction

System Menu



① Temperature Scale

Auto temperature scale, Manual temperature scale, Touch scale settings.

② Temperature measurement parameters

Emissivity, reflected temperature, ambient temperature, relative humidity, target distance, infrared window compensation and other parameter settings.

③ Image mode

Thermal image, digital camera, picture-in-picture, Thermal & digital camera fusion mode settings.

Interface Introduction

System Menu

④ ROI measurement tools

Add temperature measurement tools such as points, rectangles, circles, lines, etc., temperature rise and temperature difference, delete and display settings.

⑤ Palette

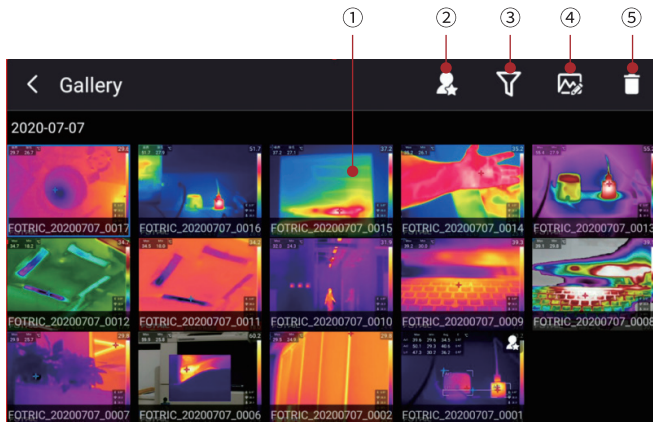
Various palettes and inverted palettes, as well as color alarms (isotherms) and MagicThermal special color palettes.

⑥ Settings

Capture mode, connection, temperature measurement range, storage and save options, device set.

Interface Introduction

Gallery



① Image display area

Display the thermal image photos, digital camera photos, full radiation thermal image video, non-radiation thermal image video thumbnails, click to select, long press for multiple choices.

② Filter favorite files

Only display files with selected favorite files.

③ Filter tags

Filter by tags, and only display the filtered files in the Image Display Area.

④ File analysis

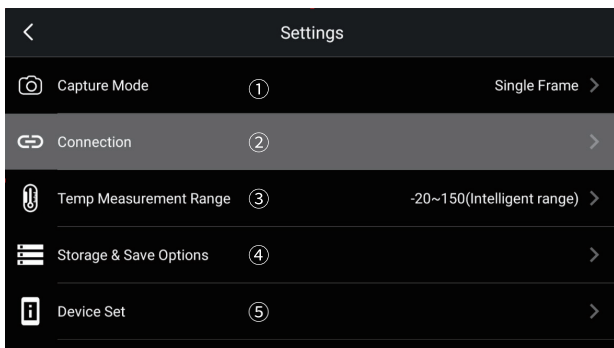
Enter the Analysis mode to analyze the thermal photos and full-radiation video files.

⑤ Delete

Delete selected files.

Interface Introduction

Settings



① Capture mode

Single frame capture, recording and time lapse settings.

② Connection

WLAN, Bluetooth, FTP

③ Temperature measurement range

Possible to be set to Intelligent range.

④ Storage & Save Options

Settings such as super resolution, video format, saving digital camera file as a separate JPEG photo, and deleting all saved files.

⑤ Device set

Settings for language, date & time and region, display settings, geographic location, screen-off time, manual adjustment mode, volume, reset, and information of thermal imager.

Quick Start

For quick start of the Thermal Imager, please follow the steps below:

1. Put a battery into the battery compartment of the thermal imager. (Before starting up the thermal imager for the first time, full charge the battery.)
2. Insert an SD storage card into the storage card slot.
3. Long Press the **Power Button** to turn on the thermal imager.
4. Aim the thermal imager toward the object of interest.
5. Press the **Autofocus Button** or adjust the Manual focus ring to get a clear image of the object.
6. Press the **Capture Button** to freeze the thermal image, so that it can be analyzed arbitrarily in this status.
7. Press the **Capture Button** again, the analyzed thermal image will be saved automatically .

Quick Start

For quick start of Fotric AnalyzIR PC software, please follow the steps below:

1. Insert the USB disk, and copy the built-in AnalyzIR analysis software to PC.
2. Install AnalyzIR and relevant drivers on PC.
3. Start the AnalyzIR professional analysis software.
4. Use Type-C USB cable to connect the thermal imager to PC; or insert the SD card into the PC card slot; or use WIFI-FTP to transfer.
5. Copy the images in the Gallery folder in the SD card of the thermal imager to PC.
6. Open AnalyzIR, right-click the blank space in the quick collection bar of the AnalyzIR software, and select to add the thermal image files.
7. Click one or more thermal images to choose.
8. Analyze, save and generate reports.
9. Click to export the report as a Word document.

Note

- It is very important to adjust the focal length correctly. An Incorrect focal adjustment will affect the imaging clarity and measurement accuracy of the thermal imager.
- The thermal imager has a resolution limit, which depends on the detector size, lens, and distance to the object. If necessary, please move closer to the object. Stay away from hazardous areas or energized electrical components.
- Be careful when using the thermal imager perpendicular to the target, because you may become the main radiation source.
- Please choose a high-emission area (for example, an area with rough surface) for measurement.
- Blank objects (with low emissivity) are mainly reflected in the environment, so they may appear wrong result in the thermal imager.
- Various types of faults (such as faults that occur in building construction) may appear same type of heat distribution pattern.
- Analysis of the infrared images requires corresponding professional knowledge.

This manual may be inconsistent with the product due to function enhancement of the product or change of version, please always refer to the actual product.

Read Before Using

Manuals Download

Before using the product, please visit the following website to read or download the manuals:

FOTRIC 340A and 340M Series:

<http://www.fotric.com/support/Fotric340>

AnalyzIR Download

PC analysis and report software AnalyzIR is a standard configuration of the product.

Please visit the following website to download:

<http://www.fotric.com/support/AnalyzIR>

Appendix A

Emissivity Table

(For reference only)

Material Name	Surface Condition	Temperature (°C)	Emissivity (ε)
Aluminum	Non-oxidized	100	0.20
	Oxidized	100	0.55
Brass	Polished brown	20	0.40
	Unpolished	38	0.22
	Oxidized	100	0.61
Copper	Severely oxidized	20	0.78
Iron	Oxidized	100	0.74
	Rusty	25	0.65
Cast iron	Oxidized	200	0.64
	Non-oxidized	100	0.21
Wrought iron	Roughened	25	0.94
	Polished	38	0.28
Nickel	Oxidized	200	0.37
Stainless steel	Oxidized	60	0.85
Steel	Oxidized at 800°C	200	0.79
Common brick	Surface	20	0.93
Concrete	Surface	20	0.92
Glass	Polished plate	20	0.94
Lacquer	White	100	0.92
	Natural color black	100	0.97
Carbon	Smoke black	25	0.95
	Candle soot	20	0.95
	Graphite rough surface	20	0.98
Paint	Average of 16 colors	100	0.94

Emissivity Table

(For reference only)

Material Name	Surface Condition	Temperature (°C)	Emissivity (ϵ)
Paper	White	20	0.93
Sand	Surface	20	0.90
Wood	Polished	20	0.90
Water	Distilled water	20	0.96
Skin	Human	32	0.98
Pottery	Fine	21	0.90
	Abrasive	21	0.93

Innovation Excellence Integrity

Equipment described herein may require EU, US and UNSC authorization for export purposes.

Imagery for illustration purposes only.

Specifications are subject to change without notice.

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