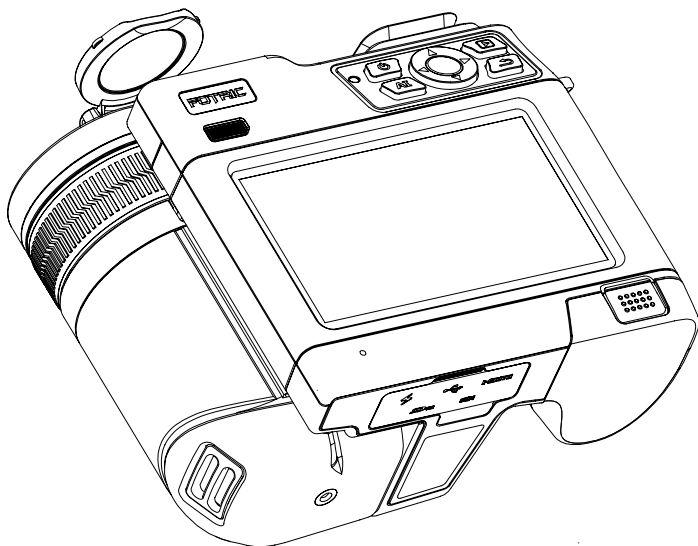


# FOTRIC Premium Handheld Thermal Camera



## Quick Start Manual






**FOTRIC**

CONNECTING THE DIGITAL FUTURE

## Preface

User Manual	Analysis Software
	 AnalyzIR Venus

### Symbols

 <b>Warning</b>	 <b>Caution</b>	 <b>Note</b>
Potential death or serious injury inducing hazards.	Potential danger of injury or property damage.	Provides additional information to emphasize the main text.

### Safety Information

The purpose of this section is to ensure that the user uses the product properly to avoid danger or property damage.

Before using this product, please read this instruction manual carefully and keep it in a safe place for future reference.

#### **Warning**

- Never disassemble or modify the thermal camera battery. The battery is equipped with safety and protective devices which, if tampered with, may cause the battery to overheat and may

also cause an explosion or burn. If the battery is leaking and the leak gets into your eyes, do not rub it, wash it with water and get immediate medical attention.

- Thermal cameras that use a laser pointer. Do not view the laser beam directly with the human eye. The laser beam can cause eye irritation.
- If the unit is not working properly, contact your dealer or our company and do not disassemble or modify the unit in any way (unauthorized modifications or repairs cause problems at your own risk).

#### **Caution**

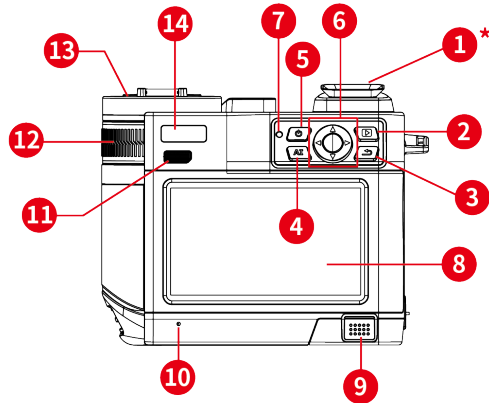
- Avoid using the product in humid, dusty, extremely hot or cold environments, please refer to the product's parameter table for specific temperature and humidity requirements.
- Do not touch the sensor or lens directly to avoid staining and damage from oil and various chemicals. If cleaning is necessary, moisten a clean cloth and gently wipe off any dust. Close the lens cap when the thermal camera is not in use.
- When the thermal camera is turned on, it may take approximately 5-10 minutes for the camera to warm up before taking accurate readings.
- Avoid focusing or prolonged observation on the sun or objects with extremely high temperatures, as this may result in reduced sensor life damage or temporary black spots (minor cases can be recovered after calibrating the NUC, severe cases can result in permanent irreversible damage to the detector).

- Avoid damage to the sensor caused by over-range use of the device.
- It is strongly recommended to use the original power adapter, the specific requirements of the power adapter are shown in the product data sheet.
- To prevent the potential danger of data loss, always make a copy (backup) of your data on a computer.
- When storing the thermal camera, it is strongly recommended to use the original box and to keep it in a cool, dry, ventilated environment free from strong electromagnetic fields.
- When shipping the thermal camera, it is strongly recommended that it be shipped protected in its factory packaging.

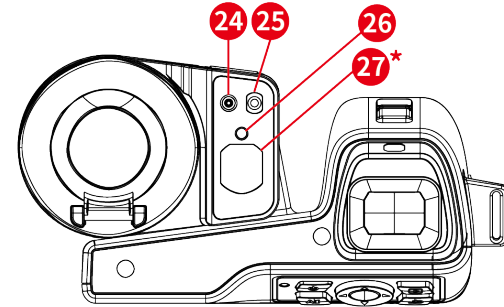
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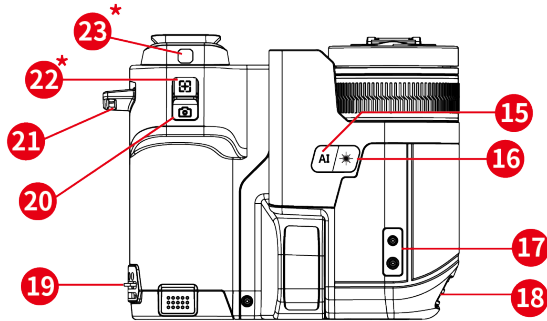
### Front View



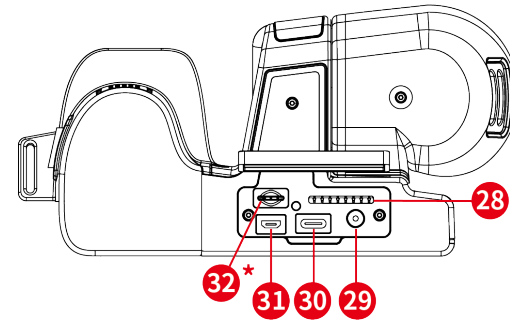
### Top View



### Rear View



### Bottom View



## Appearance

### Note

The appearance of different models of the product may vary. Please refer to the actual product.

### Parts and Interfaces

	Name	Function
1*	View Finder(optional)	Enable inspection through the view finder
2	Gallery Button	<ul style="list-style-type: none"> <li>● Enter gallery</li> <li>● Activate NUC(Non-Uniform Calibration) on the main interface</li> </ul>
3	Back Button	Exit menu or back to the previous menu
4 & 15	AI Programmable Button	<ul style="list-style-type: none"> <li>● Short press: activate custom functions</li> <li>● Long press: select custom functions</li> </ul> Two buttons can link different functions
5	Power Button	<ul style="list-style-type: none"> <li>● Short press: power on/off device</li> <li>● Long press: sleep/wake screen</li> </ul>
6	Navigation Buttons	Menu mode <ul style="list-style-type: none"> <li>● Press ▲, ▼, ◀, ▶ to select parameters</li> <li>● Press confirmation key to confirm</li> </ul>
		Non-menu mode <ul style="list-style-type: none"> <li>● Press confirmation key to summon the menu</li> </ul>

7	Indicator LED	<ul style="list-style-type: none"> <li>● Green, blinking: charging</li> <li>● Green, glowing: fully charged, screen off</li> </ul>
8	Touch Screen	<ul style="list-style-type: none"> <li>● Display</li> <li>● Touch screen operation</li> </ul>
9	Battery	Lithium battery, for power supply
10	Microphone	Input voice information
11	Speaker	Play voice, alarm
12	Focus Ring	Rotate to adjust the clarity of images
13	Infrared Lens	For infrared imaging
14	Product Label	Display product logo
16	Laser Button	<ul style="list-style-type: none"> <li>● Press to activate laser</li> <li>● Release to deactivate laser</li> </ul>
17	Tripod Connection Interface	For mounting on a tripod
18 & 19	Neck Strap Bracket	For fixing the neck strap
19 & 21	Wrist Strap Bracket	For fixing the wrist strap
20	Freeze and Capture Button	Freeze and capture images/videos
22*	Autofocus Button(optional)	Press to conduct autofocus
23*	Digital Camera(optional)	Auxiliary digital camera
24	Digital camera	Digital visible-light camera
25	LED Flash Light	<ul style="list-style-type: none"> <li>● Flash light : serve as a flash light when taking photos</li> <li>● For illumination in dark environment</li> </ul>
26	Laser Emitter	For laser indications

27*	Laser Ranger(optional)	For laser ranging
28	SD Storage Card Interface	For inserting the SD card
29	Power Supply Interface	For connecting to DC power adaptor
30	USB Type-C Interface	● For connecting to a USB Type-C cable
31	Micro HDMI Interface	High resolution streaming interface, compatible to projecting to a HDMI screen
32*	Nano SIM Port (optional)	For inserting Nano SIM card

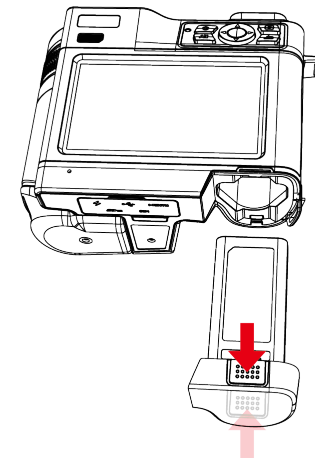
## Inserting and Removing the Battery

### 2.1 Inserting the battery

Push the battery into the battery socket. When the battery is fully inserted, it will make a distinct 'click'.

### 2.2 Removing the battery

Turn off the device, squeeze the snatch of the battery and take it out.



## Powering

When using the thermal imager for the first time or when the power is low, please charge the thermal imager.

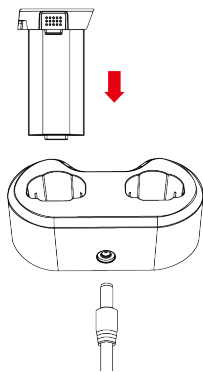
### 3.1 Charging through the charging dock

For quick charging take out the battery and mount it on the charging dock.

The voltage of the charging dock is 12VDC, please use the USB-C cable and the adaptor that came with the device.

#### Operation Procedures

1. Mount the battery(s) to the charging dock.
2. Connect the charging dock to the power source. If the dock is functioning normally, the middle LED indicators will glow green.
3. The LED indicators on the side indicate the charging status of the battery:
  - Red: charging
  - Green: charged
4. When fully charged, take out the battery and disconnect the dock from the power source.

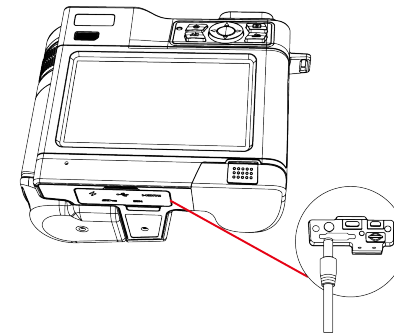


### 3.2 Charging directly with DC 12V

For expedient charging, directly charge the thermal imager through a DC 12V power adapter.

#### Operation Procedures

1. Insert the battery.
2. Lift the cover for USB-C interface.
3. Connect to a power source and start charging.



## Change Lenses

#### Operation Procedures:

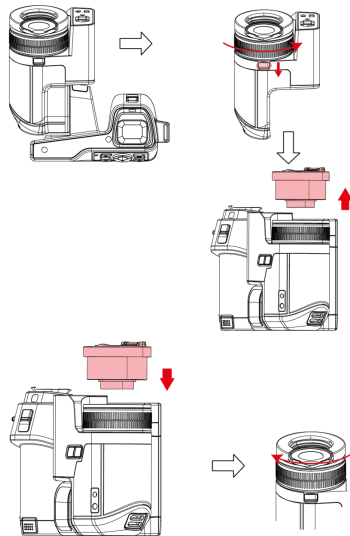
1. Press and hold the lens clamp to unlock the lens. Rotate the lens counterclockwise to unmount.
2. Carefully take off the lens

3. Align the red dot mark on the lens and the lens slot.
4. Gently push the lens in until it's firmly mounted.
5. Rotate clockwise until hearing a distinct 'click'.

### Caution

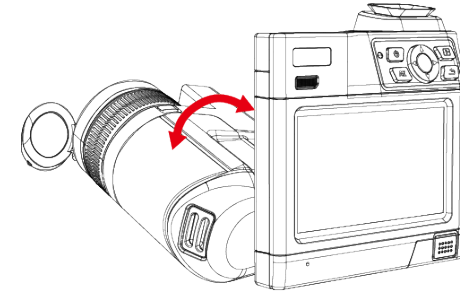
If you have purchased a new lens, please contact your dealer or the nearest service center to calibrate the new lens. This ensures optimal performance and compatibility between the lens and the device.

Before turning on the camera, make sure the lens is in place and locked securely. If it is not in place, the camera will not be able to recognize the lens when it is turned on.



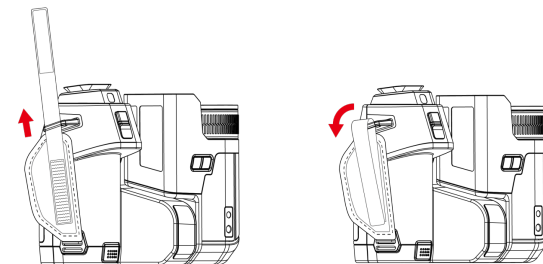
## Adjusting the Lens Angle

Rotate the lens barrel to adjust the observing angle of the thermal camera.



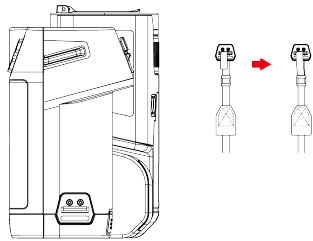
## Installing the Wrist Strap

Inserting the strap through the Wrist Strap Bracket and tighten the strap (Refer to the item 21 of Parts and interfaces table). Adjust the strap length based on your need.



## Installing the Neck Strap

Install the neck strap on the neck strap bracket (items 18 and 19 in the parts and interfaces table) of the device to prevent accidents. Pass one end of the neck strap through one of the neck strap holders and then secure the neck strap to the buckle, adjusting the neck strap length to your needs. Repeat the same steps to install the other end.



## Mounting on a Tripod

If the user need to make prolonged observation or measurements, we advise mounting the camera on a tripod.

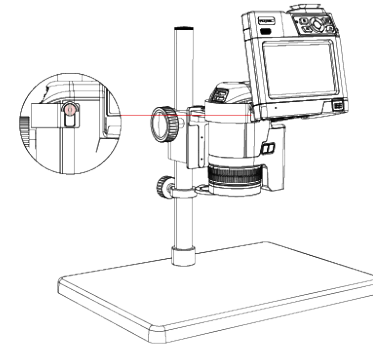
The device support connecting to a tripod via a UNC 1/4-20 interface. (17th item in the Parts and interfaces table) .

## Installing on Test Bench

Some scientific research applications or models with macro lens require the use of a test bench.

The device is mounted on the test bench through a fixed bracket, and the use height can be adjusted by the knob.

Adjust the fixing ring to lock the device and tighten it to prevent the device from shaking or slipping.



## Connecting to the PC Software

Scan the following QR codes to download the PC software.



AnalyzeIR Venus

## User Manual Link

For More Detailed Operation, Please Refer to the User Manual.



## Regulatory Information

These clauses apply only to the products bearing the corresponding mark or information.

### **Federal Communications Commission (FCC) Declaration of Conformity**

This device complies with Part 15 of the FCC. 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: Due to the device size limit, the above statement may not be disclaimed on the device.

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

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.

### Exposure to Radio Frequency (RF) Energy

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. And user must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The mobile device is designed to meet the requirements for exposure to radio waves established by the Federal Communications Commission (USA). These requirements set a SAR limit of 1.6 W/kg averaged over one gram of tissue.

### EU Compliance Statement



This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the Directive 2014/53/EU (RED), Directive 2014/30/EU (EMCD), Directive 2014/35/EU (LVD), Directive 2011/65/EU (RoHS).



Directive 2012/19/EU (WEEE Directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points.



REGULATION (EU) 2023/1542:

This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. For proper recycling, return the battery to your supplier or to a designated collection point.

### Restrictions in the 5 GHz band

According to Article 10 (10) of Directive 2014/53/EU, the packaging shows that this radio equipment will be subject to some restrictions when placed on the market in Belgium (BE), Bulgaria (BG), the Czech Republic (CZ), Denmark (DK), Germany (DE), Estonia (EE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Croatia (HR), Italy (IT), Cyprus (CY), Latvia (LV), Lithuania (LT), Luxembourg (LU), Hungary (HU), Malta (MT), Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Slovenia (SI), Slovakia (SK), Finland (FI), Sweden (SE), the United Kingdom (UK), Turkey (TR), Norway (NO), Switzerland (CH), Iceland (IS), and Liechtenstein (LI).

The WLAN function for this device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range.



BE	BG	CZ	DK	DE
EE	IE	EL	ES	FR
HR	IT	CY	LV	LT
LU	HU	MT	NL	AT
PL	PT	RO	SI	SK
FI	SE	UK	TR	NO
CH	IS	LI		

### Frequency Bands and Power

Device operates within approved frequencies overlapping with the following cellular bands:

Type	Frequency Range	Maximum emission
BLE	2.402-2.48 GHz	8 dBm
BT	2.402-2.48 GHz	-1 dBm
2.4G WIFI	2.412-2.472 GHz	21 dBm
5G WIFI	5.15-5.25 GHz	8 dBm
5G WIFI	5.25-5.35 GHz	6 dBm
5G WIFI	5.47-5.725 GHz	9 dBm
5G SRD	5.725-5.825 GHz	8 dBm
GNSS	GPS: 1575.42MHz±1.023MHz	
	GLONASS : 1597.5MHz~1605.8MHz	
	BeiDou: 1561.098MHz±2.046MHz	

## Safety Instruction

Please read all the safety information carefully before using. These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

### Laws and Regulations

Use of the product must be in strict compliance with the local electrical safety regulations.

## Transportation

Keep the device in original or similar packaging while transporting it.

Keep all wrappers after unpacking them for future use. In case of any failure occurred, you need to return the device to the factory with the original wrapper.

Transportation without the original wrapper may result in damage to the device and the company shall not take any responsibilities.

Do not drop the product or subject it to physical shock. Keep the device away from magnetic interference.

## Accessories

only accessories which meet the manufacturer's specifications shall be used.

### Power Supply

The input voltage should meet the limited energy circuit (12VDC, 3A), according to the IEC61010-1 standard. Please refer to technical specifications for detailed information.

DO NOT connect multiple devices to one power adapter, to avoid overheating or fire hazards caused by overload.

Refer to the product specification for detailed power requirements.

### Battery Charging Dock

Do not charge other battery types with the supplied charger. Confirm there is no flammable material within 2 m of the charger during charging.

### Battery

Improper use or replacement of the battery may result in explosion hazard. Replace with the same or equivalent type only. Dispose of used batteries in conformance with the instructions provided by the battery manufacturer.

For long-term storage of the battery, make sure it is fully charged every half year to ensure the battery quality. Otherwise, damage may occur.

DO NOT place the battery near heating or fire source. Avoid direct sunlight.

DO NOT swallow the battery to avoid chemical burns.

DO NOT place the battery in the reach of children.

CAUTION: Risk of explosion if the battery is replaced by an incorrect type.

Do not dispose of the battery into fire or a hot oven, or mechanically crush or cut the battery, which may result in an explosion.

Do not subject the battery to extremely low air pressure, which may result in an explosion or the leakage of flammable liquid or gas.

When the device is powered off and the RTC battery is full, the time settings can be kept for 2 months.

In the first use, power on the device and charge the RTC battery with the lithium battery for more than 8 hours.

## Emergency

If smoke, odor, or noise arises from the device, immediately turnoff the power, unplug the power cable, and contact the service center.

## Laser Rules and Regulations

### Warning

The laser radiation emitted from the device can cause eye injuries, burning of skin or inflammable substances. Prevent eyes from direct laser. Before enabling the Light Supplement function, make sure no human or inflammable substances are in front of the laser lens.

### Caution

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

## Maintenance

- Temperature measuring equipment is recommended for temperature calibration measurement once every one to two years.
- Pay attention to keep the lens clean, use a soft non-woven cloth to gently wipe and brush away dust, or use an oil-free cotton cloth dipped in 96% concentration of ethanol, wring it out and wipe it gently, avoid wiping it hard to cause permanent damage to the lens.
- Please ensure that the battery is fully charged when storing for a long time.

## 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
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

## About This Manual

The photographs, graphics, icons, and illustrations provided in this manual are for illustrative purposes only and may differ from the actual product. This manual may be updated by FOTRIC without prior notice due to product version upgrade or other needs.

The trademarks and images used in this manual are for illustrative purposes only and are the copyright of the trademark owner.

### Disclaimers

The products (hardware, software, etc.) provided in this manual may be defective, faulty or malfunctioning, and FOTRIC disclaims all warranties of any kind, express or implied, including, but not limited to, warranties of merchantability, satisfactory quality, fitness for a particular purpose, non-infringement of third party rights, etc. FOTRIC shall not be liable for any special, incidental, consequential or indirect damages arising out of the use of this manual or our products including, but not limited to, loss of business profits, loss of data or documentation.

To the maximum extent permitted by law, none of our liability will exceed the amount you paid for this product.

After the product is connected to the Internet, it may be exposed to risks including but not limited to network attacks, hacker attacks, virus infections, etc. The company will not be responsible for any abnormal work of the product, information leakage and other problems caused by this, but will provide technical support for you in a timely manner.

The products can sense motion detection and fire events when properly installed and configured, but cannot prevent accidents or resulting

personal injury or property damage.

Thermal imaging products are classified as export controlled by the United Nations Security Council (UNSC), the United States, and the European Union (EU), as well as national export regulations of their own country and/or region.

Countries subject to sanctions, embargoes, or prohibitions include Belarus, Burundi, Balkan-related sanctions (such as former Yugoslavia, some sanctions in Kosovo, Bosnia and Herzegovina), Cuba, Central Africa, Congo (Brazzaville), Iran, Iraq, Lebanon, Libya, North Korea, Russia, Syria, Sudan, South Sudan, Somalia, Venezuela, Yemen, Zimbabwe, and any other countries that may be designated from time to time. You will be responsible for any loss or liability arising from the above actions.

In using this product, you are requested to strictly comply with applicable laws. You agree that this product is for civilian use only.

In the event of a conflict between the above and the applicable law, the provisions of the law shall prevail.

## Warranty Card

### Thank you for choosing FOTRIC thermal camera!

We are committed to providing you with products of excellent performance and reliable quality. According to our warranty policy, this product enjoys comprehensive warranty service from the date of purchase.

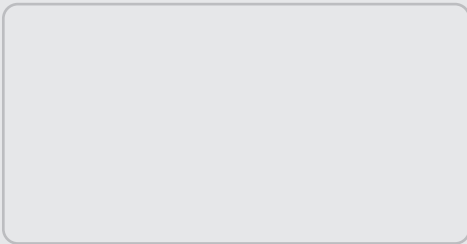
During normal use, if any defects caused by materials or craftsmanship are found in the device, we will provide you with repair or replacement services to ensure your workflow.

#### Customer Service

Global: [service@fotric.com](mailto:service@fotric.com)

United States: [service-us@fotric.com](mailto:service-us@fotric.com)

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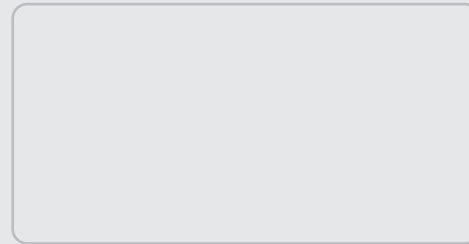
## Certificate of Quality

### Thank you for choosing FOTRIC thermal camera!

This product has passed strict quality inspection and complies with relevant technical standards and specifications to ensure reliable performance and excellent user experience.

We promise that the device you receive is a qualified product and can be used with confidence. If you need further support, please contact FOTRIC customer service team.

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# Innovation Excellence Integrity

## Company Disclaimer

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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**FOTRIC INC.**