

# TR20 series user manual



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### • PREFACE

This manual explains how to use the thermal imager and matters needing attention. Please read the manual carefully before using the thermal imager, and use the thermal imager according to the standard operation method to avoid danger or property loss during operation. Please keep this manual properly for future reference.



When laser is turned on, please do not irradiate the eyes and skin. The laser emitted by the equipment may cause damage to eyes and skin.

Description of icons used in the manual:



— Warning, the words involved in danger or harm.



— Tips, additional instructions, or helpful techniques.



— Comments, a description of the meaning of words.

## Precautions for safe use

### • DANGER

- In the process of equipment installation and use, all electrical safety regulations of the using countries and regions must be strictly observed. Use a matched power supply that meets the requirements of SELV (safety extra low voltage).
- Please use the power adapter provided by the regular manufacturer. Please refer to the product parameter table for specific requirements of the power adapter.
- During wiring, disassembly and other operations, the power supply of the equipment should be disconnected, and live operation is not allowed.
- Do not place the battery near the heat source or fire source to avoid direct sunlight.
- Batteries of correct specifications should be used, as improper use may cause explosion hazard. After the battery is installed or removed, it is required to close the battery compartment safely.
- Do not swallow batteries to avoid chemical burns.
- Do not place the battery within the reach of children.
- If the equipment is laser equipment, do not direct the laser at human eyes to avoid possible harm to human eyes.

- After the laser is turned on, it is strictly forbidden to aim the laser at objects with strong reflection, such as glass and reflector, to avoid laser reflection damaging the thermal imaging detector.

### • CAUTION

-  Do not put the thermal imager directly at high-temperature targets, such as the sun, laser, welding machine, etc., otherwise the thermal imaging detector will be damaged.
- The time interval between two power-on and power-off should be greater than 20 seconds.
- The thermal imager combines precise optical instruments and electronic equipment sensitive to static electricity, so please avoid objects falling on the equipment or vibrating the equipment vigorously, and keep the equipment away from places where magnetic field interference exists.
- Avoid installing the equipment where the surface vibrates or is easily impacted (ignoring this item may damage the equipment).

## Precautions for safe use

- Exceeding the use environment specified in this manual may cause damage to the thermal imager. Please do not use the product in extremely hot, cold, dusty, corrosive, high salinity or high humidity environment. Please refer to the product parameter table for specific temperature and humidity requirements.
- When the thermal imager is not in use and during transportation, please take out the battery and place the thermal imager in a protective packaging box.
- When the battery is too low during use, please replace the battery in time to avoid damage to the battery caused by over discharge.
- When the equipment is not in use, please cover the lens protection cover to protect the image sensor.
- When it is necessary to clean the non optical surface of the thermal imager, do not scrub with chemical solvents, thinners, etc., but wipe the shell with clean, soft and dry flannelette.
- The infrared lens of thermal imager is coated with an anti-reflection film, which only needs to be cleaned when it is obviously dirty. Frequent scrubbing of the lens may lead to wear of the lens coating. Please avoid touching the lens surface.
- Acidic substances on the skin left by fingerprints will damage the coating and lens surface. Only use special lens cloth to clean the lens.
- If you connect your products to the Internet at your own risk, including but not limited to network attacks, hacker attacks, virus infections, etc., our company will not be responsible for the abnormal operation and information leakage of the products, but we will provide you with technical support related to the products in time.
- Equipment access to the Internet may suffer network security problems, please enhance the protection of personal information and data security. When you find that the equipment may encounter network security risks, please contact us in time.
- Please do not disassemble the thermal imager by yourself. Please contact the factory in case of failure, otherwise no warranty will be given.
- Please keep all the original packaging materials of the equipment properly, so that in case of problems, the equipment can be packaged with packaging materials and sent to the service center for processing. Our company will not bear any responsibility for accidental damage in transit caused by non-original packaging materials.

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## • 1 Product overview

TR20 series is an excellent infrared thermal imaging scope. Compact design, small size, light weight and portable. Using the most advanced infrared thermal imaging night vision system with excellent image quality. It can meet the requirements of high shock vibration and can adapt to various harsh environments. There are a variety of aiming cursors can be selected, with the functions of taking pictures, video recording, WIFI transmission, etc., to meet various applications in law enforcement inspection, outdoor hunting and other occasions.

## • 2 Product features

- Light, small and powerful.
- The most advanced 12μm pixel, which provides clearer image and farther observation;
- The world's exclusive warm color display design, which protects the eyes even in case of long-term use.

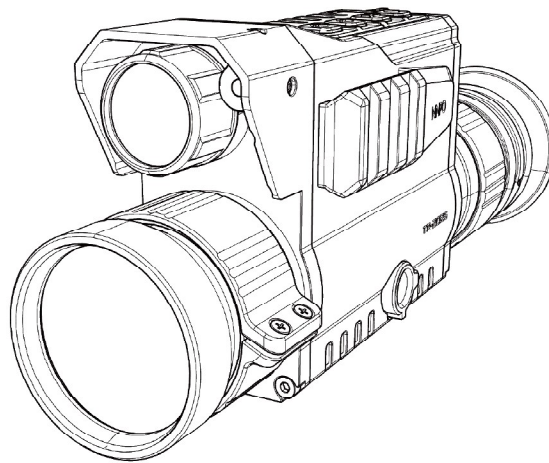


Figure 1 Thermal imager

- The only lighting auxiliary function in the world;
- APP remote control and real-time Internet streaming media;

### • 3 Main technical parameters

|                         |                                                                               |
|-------------------------|-------------------------------------------------------------------------------|
| Resolution, Pixel       | Uncooled 384*288                                                              |
| Pixel Size, micron      | 12μm                                                                          |
| Refresh Rate            | 50Hz;                                                                         |
| Display Resolution      | 1280*960 (LCOS)                                                               |
| Digital zoom            | 2×, 4×                                                                        |
| Objective Lens          | 19mm/25mm/35mm                                                                |
| Field of View (HxV)     | 13.8°×10.4°/10.5°×7.9°/ 7.5°×5.7°                                             |
| Eyereief                | 40mm                                                                          |
| Dioptre adjustment, dpt | ±5                                                                            |
| Calibration             | Shutter Calibration, scene Calibration, automatic Calibration                 |
| Reticle                 | 8 types and 5 colors;                                                         |
| palette                 | white hot, black hot, red hot, green hot, blue hot, amber, iron red, hot iron |

|                          |                          |
|--------------------------|--------------------------|
| picture in picture       | yes                      |
| flashlight               | yes                      |
| Laser indicator          | yes                      |
| WIFI                     | Connect with mobile APP  |
| digital compass          | yes                      |
| accelerometer            | yes                      |
| Hot spot tracking        | yes                      |
| Take pictures and videos | yes                      |
| video output             | Composite video output   |
| battery                  | 1x 18650                 |
| Working hours            | Single battery > 4 hours |
| External power supply    | TYPE-C                   |
| Shell material           | Aviation aluminum alloy  |

|                    |                   |                 |      |
|--------------------|-------------------|-----------------|------|
| measure/<br>weight | 19mm focal length | 186mm*51mm*74mm | 540g |
|                    | 25mm focal length | 189mm*51mm*74mm | 560g |
|                    | 35mm focal length | 195mm*51mm*74mm | 560g |

|                       |            |
|-----------------------|------------|
| the protection grades | IP67       |
| Working temperature   | -30°C~60°C |

## • 4 Packing configuration

The thermal imager configuration is shown below.

| item No | item description                 | quantity           |
|---------|----------------------------------|--------------------|
| ①       | Thermal imager                   | 1 piece            |
| ②       | Model 18650 rechargeable battery | 2pieces (optional) |
| ③       | charger                          | 1 piece            |
| ④       | User manual                      | 1 piece            |
| ⑤       | Wipe cloth                       | 1 piece            |
| ⑥       | tool kit                         | 1 set              |

