

Outdoor Thermographic Telescope

User manual



HT-C8

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Summary

The HT-C8 outdoor thermal image telescope takes advanced uncooled focal plane infrared detector and high-quality optical lens as the core in combination with a convenient and fast operating system, compact shape design, fully functional expansion spare parts, long service life, ruggedness and durability, suitable for various environments. It has built an infrared thermal imaging tool with “clear imaging, simple operation and easiness to carry”.

This product is used for field animal observation, search and rescue, police law enforcement and investigation, night patrol, outdoor sports, personal security, etc. This product functions as photo taking, and can browse photos taken through the USB connected computer, which is convenient for multiple people to observe at the same time and create possibilities for more applications.

Cautions and Safety Maintenance

To ensure the proper use of this product, please read the instructions carefully:

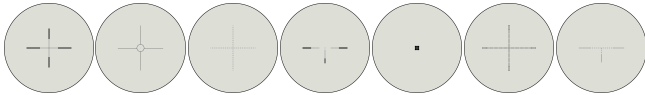
- Do not use this product in a flammable, explosive, humid or corrosive environment.
- This product contains precision electronics and sensitive optical devices. Please do not make it collide or fall to avoid damage.
- Do not disassemble and refit this product without permission.
- Use wet cloth or weak soap to clean the casing of this product. Do not use abrasive, isopropanol or solvent. Use professional optical lens cleaning agent for the lens and screen.
- When the product works, there will be a slight click every few seconds. This is the sound of lens shutter, which is a normal case.
- Warning: Do not use the lens to look directly at the sun, which may damage the optical lens.

Performance Indicators

1. Detector type: uncooled focal plane
2. Detector's resolution: 384x288 infrared focal plane
3. Detector's pixel spacing: 17um
4. Detector's frame frequency: 50Hz
5. Detector's response wave band: 8um-14um
6. Detector's noise equivalent temperature difference: < 50mk
7. Infrared lens focus: 25mm, 35mm, 54mm, 75mm,
8. Lens adjustment: Manual focusing and definition adjustment
9. Infrared lens field angle: 14.9°x11.2°; 10.7°x8.0°; 6.9°x5.2°; 5.0°x3.7°
10. Image processing: Nonuniformity correction, image smoothing function, image detail enhancement, digital filtering and noise reduction
11. Image detail mode: 5-level image edge adjustment (0-4), or 5-level image detail adjustment (0-4).
12. Electronic amplification: 2x,4x
13. Brightness regulation: 10-level brightness regulation (0-9) performance indices
14. Contrast regulation: 10-level contrast regulation (0-9)
15. Color palette: 6 categories of color palettes, rainbow, hot metal, white heat, black heat, yellow saturation, bird watching mode

16. Hot spot tracking: hot spot tracking indication, automatically track multiple hot spot targets, and capable of choosing to turn on or off the hot spot tracking function

17. Cross cursor: 7 categories of cross cursors, to change different cursors freely, to accurately locate the target, and to be able to choose to turn on or off the cross cursors.



18. Cursor distance calibration: to calibrate cursor positioning based on different distances, to change target distance cursor at any time, and to aim at the target accurately.

19. Target distance (25mm lens)

a. Character: Detection distance: 1667 meters, identification distance: 471 meters

b. Wild boar: Detection distance: 1471 meters, identification distance: 367 meters

c. Vehicle: Detection distance: 2501 meters, identification distance: 626 meters

20. Target distance (35mm lens)

a. Character: Detection distance: 2334 meters, identification distance: 584 meters

b. Wild boar: Detection distance: 2059 meters, identification distance: 514 meters

c. Vehicle: Detection distance: 3501 meters, identification distance: 876 meters

21. Storage capacity: 16G

22. Image type: BMP

23. USB: Type-C

24. Battery model: 18500 Panasonic lithium battery; 2040mAh

25. Working hours: 6 hours

26. Automatic power off duration: 40 minutes

27. Encapsulation type: metal

28. Shock resistance: 800G IEC68-2-29

29. Weight: 500 grams

30. Product dimension: 180x72x62mm (25mm focal length)

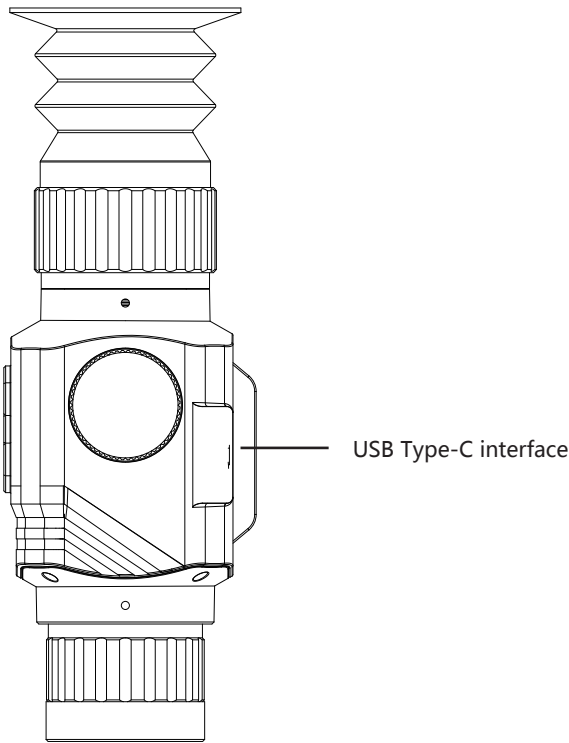
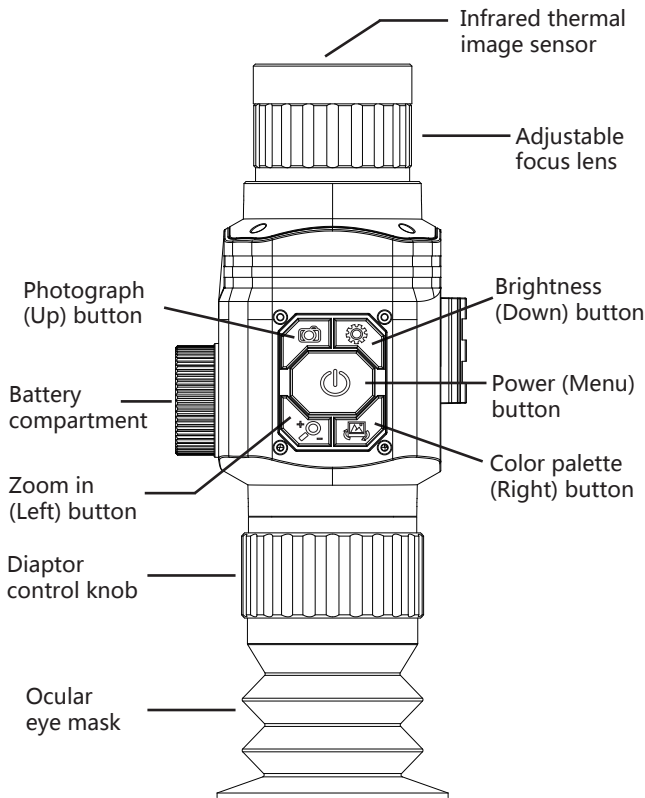
31. Protection level: IP66

32. Operating temperature: 0°C to 45°C

33. Storage temperature: -20°C to 60°C

34. Power consumption: 1w

Product Structures



Description of Button Operation

1. Power button: Long press the Power button for power on, and short press the Power button to enter the menu mode.
2. Photo button: Short press the photo button to display the camera symbol and take photos. Long press the photo button for selection the cursor type upward
3. Brightness button: Short press the Brightness button to change the brightness by 10 levels (0 ~ 9). Long press the Brightness button for selection the cursor type downward.
4. Zoom in button: Short press the Zoom in button, 1x, 2x and 4x, and long press the Zoom in button to extract the cursor calibration upward.
5. Color palette button: Short press the Palette button, rainbow, hot metal, white heat, black heat, yellow saturation and bird watching mode. Long press the Color Palette button to extract the cursor calibration downward.

Description of Menu Operation

1. Main menu: Press the Power button to open the main menu, press the Up button or Down button for selection, press the Power button for confirmation, select the Exit item to exit the main menu.
2. Color palette selection: 6-color palette. Press the Up button or Down button for selection, press the Power button to confirm and return to the main menu.

3. Cursor switch: Press the Up button or Down button for selection, press the Power button to confirm and return to the main menu.
4. Cursor type: 7 kinds of differentiation lines. Press the Up button or Down button for selection, press the Power button to confirm and return to the main menu.
5. Extract cursor calibration: 10m, 30m, 60m, 100m, 300m, 600m, user-defined. Press the Up button or Down button for selection, press the Power button to confirm and return to the main menu.
6. Hotspot tracking: Press the Up button or Down button for selection, press the Power button to confirm and return to the main menu.
7. Zoom in button: 1x, 2x and 4x times. Press the Up button or Down button for selection, press the Power button to confirm and return to the main menu.
8. Brightness selection: 10 levels (0-9). Adjust the detector's brightness other than the brightness of the display. Press the Up button or Down button for selection, press the Power button to confirm and return to the main menu.
9. Contrast: 10 levels (0-9). Adjust the detector's contrast other than the contrast of the display. Press the Up button or Down button for selection, and press the Power button to confirm and return to the main menu.
10. Image detail mode: Adjust the image edge or image detail. Press the Up button or Down button for selection, and press the Power button to confirm and return to the main menu.

11. Image detail value: Level 5 (0-4). Press the Up button or Down button for selection, and press the Power button to confirm and return to the main menu.

12. Language selection: Press the Up button or Down button for selection, and press the Power button to confirm and return to the main menu.

13. Cursor calibration: Press the Up button or Down button for activation, select the Exit item to return to the main menu, press the Power button to confirm to go to the second layer menu, press the Up button or Down button for selection (10m, 30m, 60m, 100m, 300m, 600m, custom), press the Power button for confirmation, and the calibration distance is displayed in the upper left corner of the display. Press the Up button or Down button to change the value of X axis, and press the left button or right button to change the value of Y axis. The coordinate values of X-axis and Y-axis are displayed on the display. Press the Power button for confirmation and return to the previous layer. After all calibration is completed, select the exit option, return to the main menu, and deactivate the cursor calibration.

15. Firmware upgrade: First connect the device through USB, copy the upgrade file to the device SD card, disconnect the USB connection, press the Up button or Down button for the selection of the upgrade. The upgrade process lasts about 1 minute, and the display displays the YES character indicating that the upgrade is successful. Press the Up button or Down button to select off, press the Power button to confirm and close the upgrade, and return to the main menu.

16. Eyepiece visibility adjustment: Rotate the visibility adjustment knob left and right to adjust your visibility.

17. Adjustable lens: Rotate the adjustable lens left and right to focus. Rotation clockwise means near focus, and rotation counterclockwise means far focus.

Description of battery charging

This product is built-in with chargeable batteries. When the power is insufficient, please charge it in a timely manner. Charging can be made in 2 modes.

Charging mode 1:

Batteries are charged by the USB Type-C interface of the thermal image telescope. After it is fully charged, unplug the USB wire.

Charging mode 2:

1. Unscrew the battery cover and take out the batteries.

2. Used the charger from the original manufacturer to charge the batteries. Install the batteries properly according to the polarity as shown on the charger.

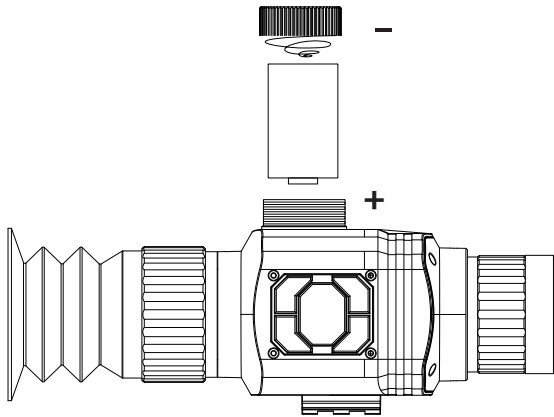
3. After it is fully charged, disconnect power supply for the charger, and remove the batteries.



Prompt: When this product lies idle for long, it shall be charged at least every three months to prevent irreversible loss of capacity due to too low battery power arising from its own discharge as it is kept too long.

Description of Battery Installation

- 1. Open the battery cover: Unscrew the battery cover counterclockwise.
- 2. Install the lithium battery: Put the battery into the battery compartment with the negative pole of the battery facing outward.
- 3. Install the battery cover: Tighten the battery cover clockwise.

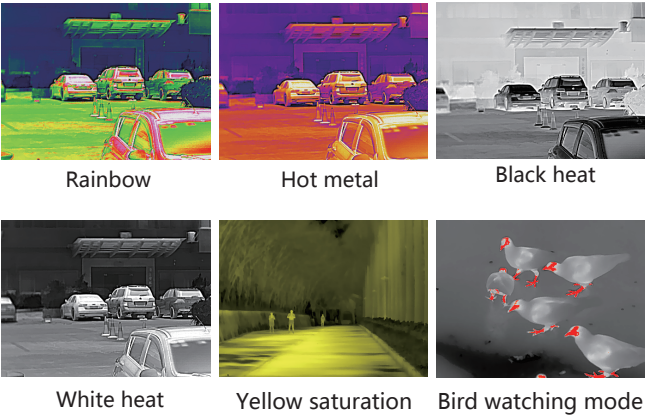


Application of Color Palette

The palette menu can change the pseudo color of the infrared thermal image, and provides 6 palettes: rainbow, hot metal, white heat, black heat, yellow saturation and bird watching mode.

Choosing an appropriate palette can better display the details of the target object. For rainbow, the hot metal palette focuses on displaying colors, which is very suitable for high thermal contrast and is used to improve the color contrast between high and low temperatures. However, the white hot palette provides uniform linear colors.

Image effects out of photo taken by six kinds of color palettes:



Application of Image Detail Mode

1. Only one of the image edges or image details can be selected for the adjustment to image quality.
2. If you want the image edge to be clearer and more stereoscopic, then select the image edge before selecting the corresponding value on the image detail value to make the image edge clear.
3. If you want the overall image quality to be clearer, select details, and then select the corresponding value on the image detail value to make the overall image quality clear.

Calibration and Application of Cursors

1. Before use for the first time, mount the C8 product onto the equipment. As customers maintain a variety of equipment, it is necessary to complete the matched setting for the C8 product and the equipment. At different distances, the landing point and the C8 cursor must be calibrated consistently. Select the landing point distance (10m, 30m, 60m, 100m, 300m, 600m or user-defined distance). Perform cursor calibration for each item. Please refer to the previous operation for cursor calibration.

Note: As the target distances are different and the coordinates of the cursor are not located at the same point, so it is necessary to select the calibration distance according to the distance so as to achieve the purpose that the landing point coincides with the C8 cursor and aims at the target more accurately.

2. During actual use, visually check the prey distance, for example, about 10m, and extract the cursor calibrated for 10m. At this time, the center position of the cursor is the center position of the prey. Aim directly according to the cursor of C8 product.
3. Visually check the prey distance, for example, about 100m, and extract the cursor calibrated for 100m. At this time, the center position of the cursor is the center position of the prey. Aim directly according to the cursor of C8 product.

Product After-Sale Service

Dear our customer,

Thank you for having purchased our products. The warranty period of this product is from the date of sale.

During the warranty period, the product shall be installed and used in accordance with the operation instructions under normal environment and conditions. If the defective product is caused by raw materials and processing process, you will be entitled to free maintenance service with the warranty certificate. You are kindly requested to keep the warranty certificate properly, for there will be no reissue of it in the case of loss thereof.

To avoid problems in the process of application, we recommend that you be familiar with the product manual before using the product.

Under any of the following circumstances, the product will not be covered by the warranty:

1. The original of valid warranty certificate fails to be presented;
 2. Damage caused by product installation not meeting product requirements and relevant specifications;
 3. The user's improper use of the product, improper storage, unauthorized disassembly, unauthorized maintenance and other reasons.
 4. Damaged caused by natural disasters (such as earthquake, flood or lightning strike), or external disasters (such as fire or house collapse).
- 1.The product is beyond the warranty period.

Cautions:

1. In case of any product failure, the product will be inspected and repaired or replaced with new or good products as the case may be;
2. For any products beyond the warranty period, it will be decided whether to repair or replace parts and components after product inspection, and charge related fees for various maintenance and replacement services.