

Thermal/Digital Night Vision Scope Manual

Model: ONT-OSP-5XMAG



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【Safety Guidelines】

⚠ Risk of Blindness

Do not use this product to directly observe strong light sources such as the sun at any time, as it will cause permanent damage to your eyes.

⚠ Choking Hazard

Children must use this product under parental supervision. Please keep packaging materials (such as plastic bags, rubber bands, etc) away from children, as there is risk of suffocation.

⚠ Fire Hazard

Do not expose the product, especially the lens, to direct sunlight to avoid fire risk and product damage. Do not place it in high-temperature environments. Do not leave the thermal imaging camera in a car during hot weather or under direct sunlight. Also, avoid placing it near heating equipment, as this may affect performance.

⚠ Do Not Disassemble the Product

Do not disassemble the product without permission. If the product fails, please contact the dealer.

【Use Environment and Precautions】

The thermal imager should be stored in a soft bag. The operating environment should be between -25°C and +50°C, with relative humidity not exceeding 80%.

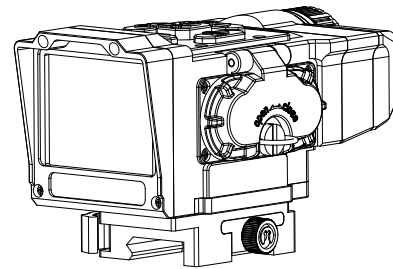
Thermal Imager should be stored in a clean and dry place to avoid moisture, mold, heavy pressure, mechanical damage, and solar radiation.

Try to avoid rain or fog, and prevent falling, bumping and collision.

If you find that the image on the display screen is jumping, the green grid lines are on, or the screen is not lit, it means that the voltage is too low and needs to be charged.

If you need to clean the optical surfaces of the objective lens or eyepiece, first blow off the fine sand and dust, then wipe the surface with a soft cloth.

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【Product Description】

This product uses advanced uncooled sensors, infrared thermal imaging technology, night vision + thermal imaging fusion, and multiple image modes. It features a 256×192 thermal imaging sensor, 12μm pixel pitch, and a 2K night vision CMOS sensor. It can operate in infrared, night vision, and thermal imaging modes either simultaneously or separately. With a detection range of up to 1000m and a 50/60Hz high-frequency sensitivity detector, it delivers no delay, no ghosting, and clear, detailed images. This greatly enhances observation comfort and offers a variety of practical functions for a wide range of usage scenarios.

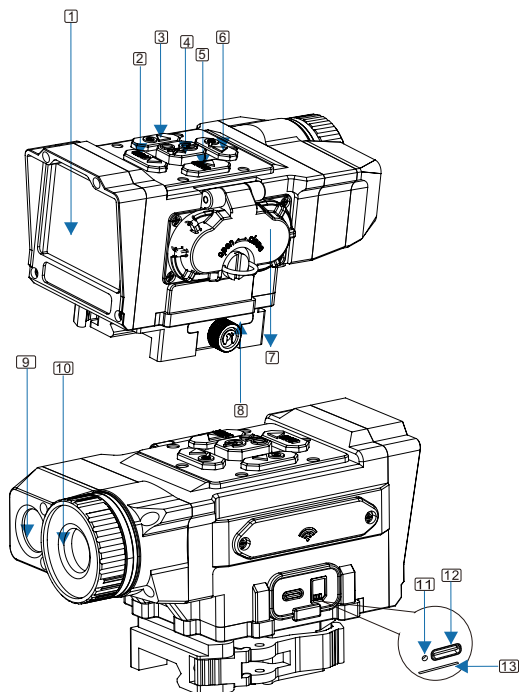
Scope of application:

Wild nature observation, animal search and rescue, emergency search and rescue, law enforcement inspections, night patrols, mountain search and patrols, personal sports and outdoor sports, security patrols, etc.

Performance Characteristics:

- ◆ 2-inch large screen display, comfortable viewing, clearer image details
- ◆ Multiple magnification levels available: choose different magnifications based on your needs for long- and short-distance observation
- ◆ Provides multiple pseudo-color modes: 7 thermal imaging modes: white hot/black hot/fusion/red hot highlight/iron red/Rainbow/green hot, and 3 night vision modes: full color/black and white/fluorescent green, so that users can choose the best display effect according to the scene
- ◆ Support WIFI connection, which can transmit images to mobile phones, tablets and other devices in real time;
- ◆ Thermal imaging and night vision functions can be switched with one button to meet more observation needs;
- ◆ Picture-in-picture mode to highlight objects of interest
- ◆ High-speed memory card, supports real-time video recording
- ◆ The lithium battery has a battery life of more than 4 hours and supports continuous use with an external mobile power supply
- ◆ Standard Type-C charging port, can be used in a variety of charging methods
- ◆ The button design is intuitive, easy to operate, and the functions are clear, making it easy to operate
- ◆ Multi-language: 6 built-in languages, you can choose your own
- ◆ IPX6 waterproof rating

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- 1.Display 2.Down adjustment button/menu button 3.Left adjustment button
4.Power button 5.Right adjustment button 6.Up adjustment button/zoom in button
7.Battery compartment 8.Base 9.Visible light lens 10.Infrared lens
11.Indicator lights 12.Type-c interface 13.SD card

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【Charging Batteries】

The thermal imager battery is a 3.7V lithium battery, model 18350, which is rechargeable and can provide more than 4 hours of use. Please remember to charge the battery before first use.

Battery Charging Method:

- Unscrew the battery compartment cover
- Adjust the positive and negative poles of the battery, install the battery in the battery compartment with the positive pole facing inward and the negative pole facing outward, and rotate the battery compartment cover to close
- Connect the power adapter to the Type-C charging cable, and insert the other end into the port on the device
- After the connection is successful, the power indicator on the device lights up red. At this time, the device is turned on, and the mark will flash in the lower left corner of the display, indicating that the charging is normal
- During normal charging, press the power button to turn off the device to shorten the charging time

【Install the Battery】

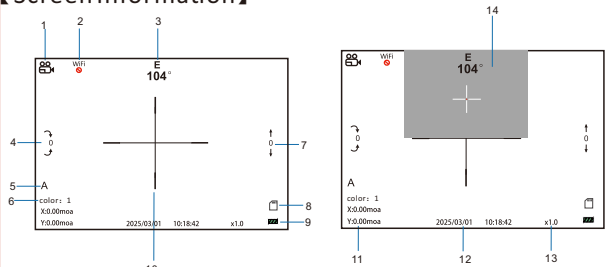
Open the battery cover and take out two 18350 batteries (minimum 3.7V). Insert the batteries into the compartment with the positive poles facing inward. Tighten the battery cover, press the power button, and look through the eyepiece to see if the internal display is lit. If it is, the batteries are installed correctly.

If the display does not turn on, please check the following:

- Are the batteries type 18350?
 - Are the batteries installed in the correct direction?
 - Is the battery cover tightened securely?
 - Do the batteries have sufficient power?
- After confirming all four points, try turning on the device again until it functions normally.

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【Screen Information】



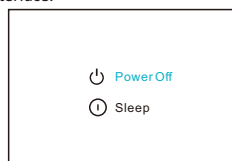
- 1:Recording Status 2:WiFi Display 3:Compass Display 4: Pitch Gyroscope
5: Storage A/B/C 6: Color Mode 7:Tilt Display 8: Memory Card Display
9: Battery Level Display 10: Reticule Display 11: Crosshair position
12: Date 13:Magnification 14: Picture-in-Picture Display

【Power On】

- ◆Open the lens cover and short press the power button to turn on the device.

【PowerOff/Sleep】

- ◆Regardless of the device's state, long press the button (3 seconds) to display the following interface. Press the button to select Power Off/Sleep Mode. After selecting, press the button to confirm. In sleep mode, press the button to return to the original interface.



【Landscape Observation】

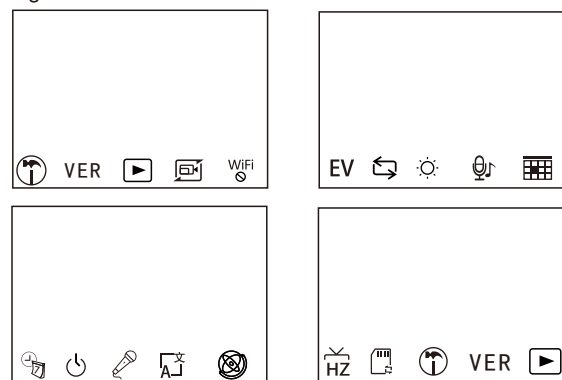
- ◆When the device is turned on, put your eyes to observe the display screen, and aim the objective lens at the object to be observed.

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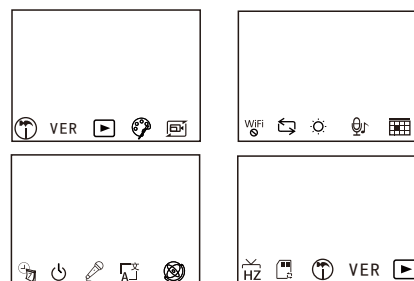
【Power On and Introduction of Menu】

- ◆After powering on, long press the button to enter the main menu interface

Night vision mode menu interface

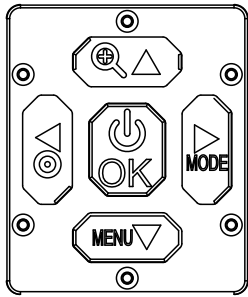


Thermal imaging mode menu interface



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【 Product Button Operation Details 】



Short press: Turn on the device
Start/pause recording
Confirm in menu mode
Long press: Turn off the device



Short press: Switch between visible
light/infrared/fusion mode
Long press: Crosshair Adjustment



Short Press: Switch Crosshair Color Long Press: Switch Crosshair Style



Short Press: Digital Magnification Long Press: Turn Picture-in-Picture
Visible Light and Infrared Magnification On/Off



Short Press: Switch Night Vision/Thermal Long Press: Enter the Menu
Imaging Moder

【 Installing the device on the rail 】

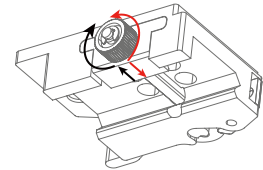
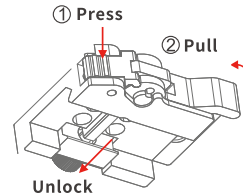
To mount the scope to the rail, please follow these steps.

1. Screw the accessory picatinny rail to the gun, with the serrated grooves of the picatinny rail facing forward (towards the muzzle).

2. Follow the steps shown in the illustration to loosen the retaining clips and loosen the Picatinny rail.

3. Slide the device forward from the rear of the rail (towards the buttstock) to avoid blocking other accessories and adjust it to the desired position.

4. Lock the device in place and depress the lever as shown to ensure that the device does not wobble.



Change the spacing between the bases

【 Detailed Introduction of Buttons 】

	Button	Click	Press and Hold for 3 Seconds
	Product Interface	Turn On	Power Off/Sleep
	Main Interface	Start/ Stop video	
	Menu Interface	Confirm Option	
	Submenu	Confirm Option	
	Return Interface	Play/Pause Confirm Option	
	Main Interface	Digital Zoom	Turn Picture-in-Picture On/Off
	Menu Interface		
	Submenu	Switch Option	
	Return Interface		
	Main Interface	Switch Night Vision/Thermal Imaging Mode	Enter the Menu Interface
	Menu Interface		
	Submenu	Switch Option	
	Return Interface		
	Main Interface	Switch Crosshair Color	Switch Crosshair Style
	Menu Interface	Switch Option	
	Submenu		
	Return Interface	Switch Option	
	Main Interface	Switch between Visible Light/Infrared/Fusion	Enter the Crosshair Adjustment Interface
	Menu Interface	Switch Option	
	Submenu		
	Return Interface	Switch Option	

【 Picture-in-picture mode 】

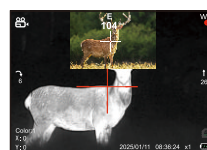
◆ Dual-sensor night vision device, combining low-light vision and thermal imaging. To activate the picture-in-picture mode, power on the device and long-press the button. When the device is in digital imaging mode, the picture-in-picture display shows thermal imaging; when the device is in thermal imaging mode, the picture-in-picture display shows the digital image.



Digital mode



Thermal imaging mode



Picture-in-picture mode



Picture-in-picture mode

【Zero Calibration】

How to sight the unit :

1. Preparation:

- ◆ Secure the Rifle: Place the rifle on a stable rest (e.g., sandbags, bipod, or shooting bench). A vise isn't mandatory with one-shot zeroing, but stability helps.
- ◆ Select a Target: Use a thermal-visible target at your desired zero distance (e.g., 100 yards for hunting). Options include:
 - Heated Targets: Hand warmers, hot water bottles, or chemical heat packs taped to a target board.
 - Foil or Reflective Targets: Aluminum foil or IR-reflective patches (e.g., from IR.Tools) that stand out.

2. Enter Zeroing Mode:

- ◆ Navigate to the zeroing or calibration menu (For detailed instructions, see page 16.)
- ◆ This mode prepares the scope to freeze the image after a shot.

3. Fire a Single Shot:

- ◆ Aim at the center of the thermal target's heat signature using the reticle.
- ◆ Fire one round, keeping the rifle as steady as possible to minimize recoil-induced movement.
- ◆ Press the OK button (e.g., "Freeze" or "Snapshot") to capture the thermal image showing the bullet's impact.

4. Handle the Frozen Picture:

- ◆ Why It Freezes: The frozen image lets you see the bullet hole's heat disruption (or impact on a heated target) relative to the reticle without needing to keep the rifle aimed or check the target manually.

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- ◆ Adjust the Reticle: Use the scope's windage (left/right) and elevation (up/down) controls (usually arrow buttons or a joystick) to move the reticle to the bullet's impact point on the frozen image.
- ◆ For example, if the bullet hit low-left, move the reticle down and left to align with the hole.
- ◆ No physical turret adjustments are needed; the scope digitally shifts the reticle.
- ◆ Unfreeze: Once adjusted, exit the freeze mode (often by pressing the same button or saving the profile). The scope returns to live view with the reticle now aligned.

5. Verify the Zero:


- ◆ Fire a confirmation shot (or a 3-shot group if preferred) at the same target.
- ◆ Check the impact point through the scope (use zoom or Picture-in-Picture mode to see details).
- ◆ If the shots are off, repeat the freeze-and-adjust process until the reticle and impact align (sub-MOA accuracy is typical for a good zero).

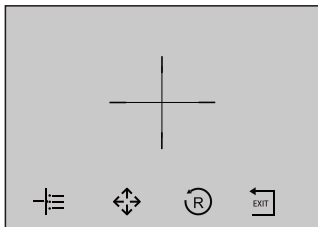
6. Save the Zero:




- ◆ Save the zero profile in the scope's menu to lock in the settings for that rifle/ammo combo.

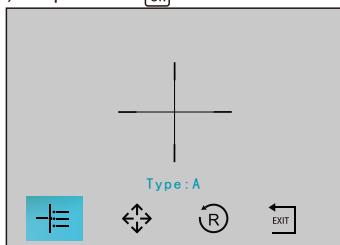
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【Crosshair Adjustment】






- ◆ In the main interface, long press  to enter the crosshair adjustment main interface, and the options (as shown below) will appear.

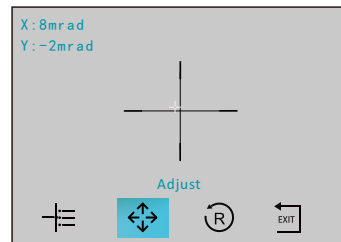




1. Press the  button to select the "≡" option, press the  button to select the Data Type A/B/C stored when the user last used it, and press the  button to save.

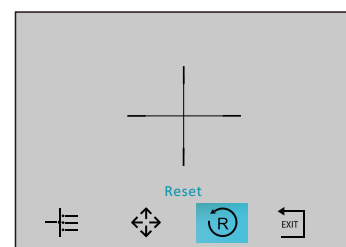


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2. Press the  button to select adjustment. When the "↔" option is selected, press the  button to enter the crosshair adjustment interface. Press the  button to adjust the position of the X axis of the crosshair. Press the  button to adjust the position of the Y axis. After adjustment, press the  button to save.

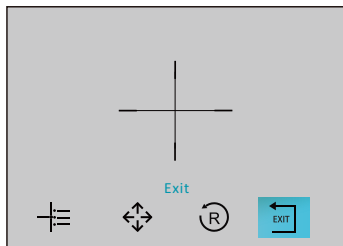


3. Press the  button to select the third option (Reset). When "R" is selected, pressing the  button will reset the above adjustments and return to the main interface.



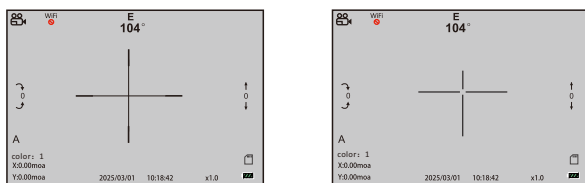
16

4. Press the button to select the third option and exit. When "EXIT" is selected, press the button again to save the adjustment and return to the main interface.

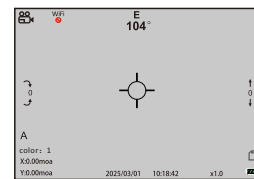
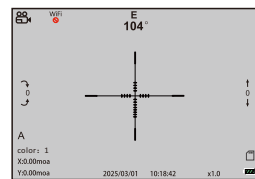


【Crosshair Style】

◆ In the main interface, long press the button to switch the crosshair style, there are four types in total.

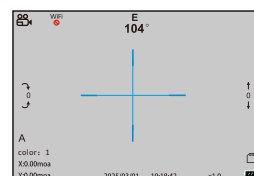
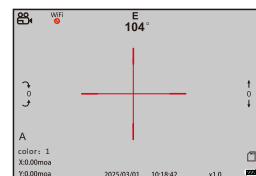
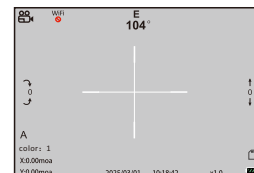
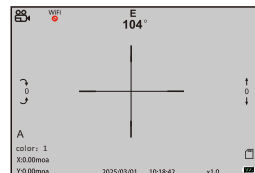


17

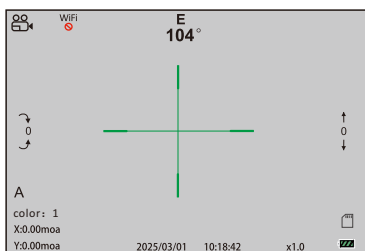


【Crosshair Color】

◆ In the main interface, short press the button to switch the crosshair style, there are five types in total.

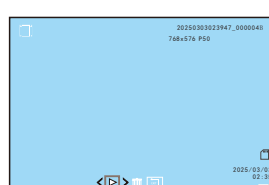
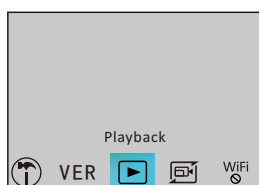


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【Playback】

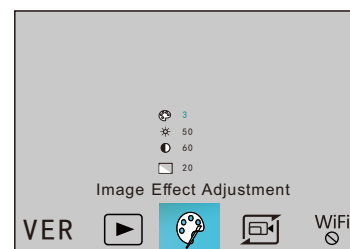
◆ Long press the button to enter the menu. Then press the button to select "playback" in the menu interface. Short press the button to enter the submenu, then press to select a video to watch. Press the button to confirm. Press the button during video playback to pause the video, and press the button again to resume normal playback.



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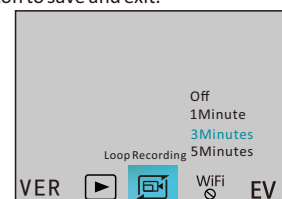
【Image Effect Adjustment】

◆ In thermal imaging mode, long press the button to enter the menu. Then press the button to select Image Effect Adjustment in the menu interface. Press the button to select the adjustment option, and then press the button to adjust the parameters. After adjustment, press or to save and exit.








【Loop Recording】

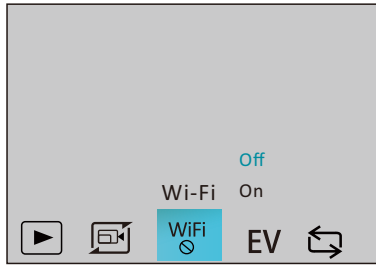
◆ Press and hold the button to enter the menu. In the Press menu interface, select Loop Recording Adjustment. Press to select the loop recording time. You can choose to turn it off or record for 1 minute, 3 minutes, 5 minutes, or 10 minutes. After confirming, press and hold the button to save and exit.



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【Wi-Fi】

◆ Press and hold the  button to enter the menu, then press  to select Wi-Fi in the menu interface. Press   to select On/Off, and after confirming, press and hold the  button to save and exit.



◆WIFI connection steps

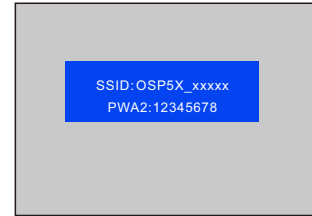
1. Install the mobile phone app:

You can use the Roadcam app to connect to the device. The app supports real-time image transmission, photo capture, video recording, and other features. It is available for download on both Android and iOS app stores.

2. Connection Steps:

A) Open wifi and connect on your mobile device;
(the password is the default 12345678)

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B) Open roadcam app on your phone;

C) Click on camera icon;

D) This should now pull up real time image from device ;






【 Exposure 】

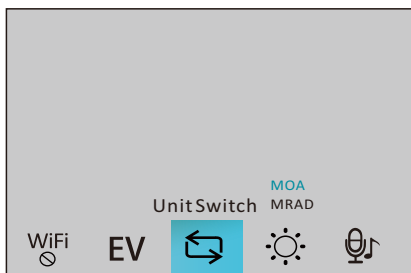
◆ In night vision mode, long press the  button to enter the menu, press  to select exposure compensation. In the menu interface, press   to select the exposure level, and long press the  button to save and exit after confirming.








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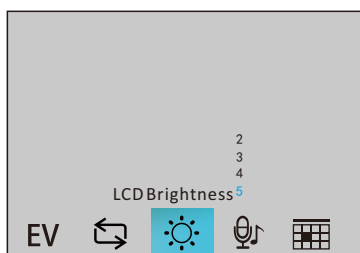
【 Unit Switch 】

◆ Press and hold the  button to enter the menu. In the menu interface, press  to select Unit Switch, press   to select MOA/MRAD, and then press and hold the  button to save and exit.



【 LCD Brightness 】

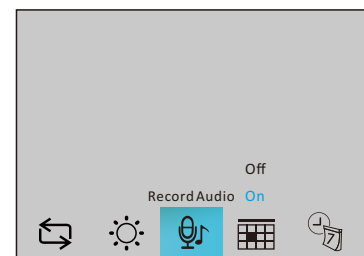
◆ Press and hold the  button to enter the menu, then press  to select LCD Brightness Adjustment in the menu interface. Press   to select the brightness level, and after confirming, press and hold the  button to save and exit.








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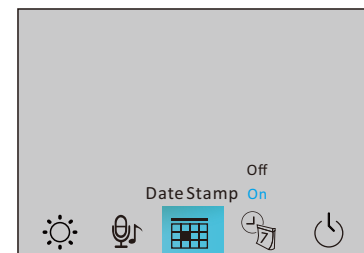
【 Record Audio 】

◆ Press and hold the  button to enter the menu, then press  to select Video and Audio in the menu interface. Press   to select On/Off, and then press and hold the  button to save and exit.



【 Date Stamp 】

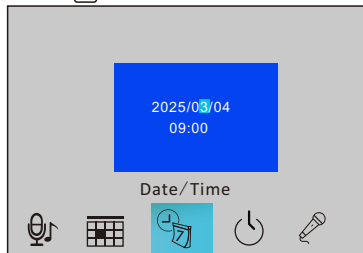
◆ Press and hold the  button to enter the menu, then press  to select the Date Label in the menu interface. Press   to select On/Off. After confirming, press and hold the  button to save and exit.



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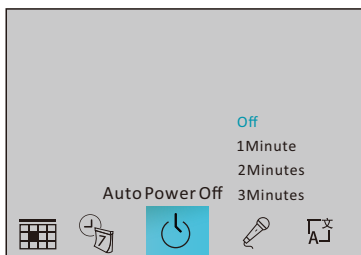
【Date/Time】

◆ Long press the **MENU** button to enter the menu, then press **OK** to select Date/Time in the menu interface. Press the **OK** button to enter the adjustment interface. Press the **MODE** button to adjust the position, press the **MENU** button to adjust the value. After adjustment, press the **OK** button to save and exit.



【Auto Power Off】

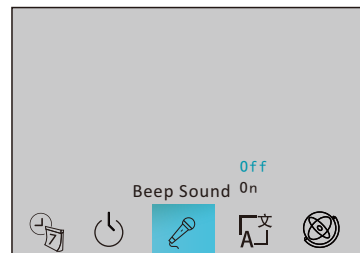
◆ Press and hold the **MENU** button to enter the menu. Press **OK** to select Auto Shutdown in the menu interface. Press **MENU** to select Shutdown or Auto Shutdown after 1 minute, 3 minutes, 5 minutes, or 10 minutes. After confirming, press and hold the **MENU** button to save and exit.



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【Beep Sound】

◆ Press and hold the **MENU** button to enter the menu. Press **OK** to select "Beep Sound" in the menu interface. Press **MENU** to select On/Off. After confirming, press and hold the **MENU** button to save and exit.



【Language】

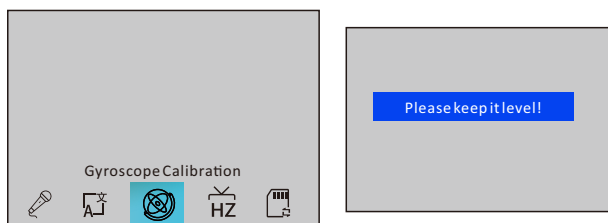
◆ Press and hold the **MENU** button to enter the menu, then press **OK** to select the language in the menu interface. Press **MENU** to select Deutsch, Italiano, Simplified Chinese, Traditional Chinese, Русский, 日本語, English, Français, Español, Português. Press and hold the **MENU** button to save and exit.



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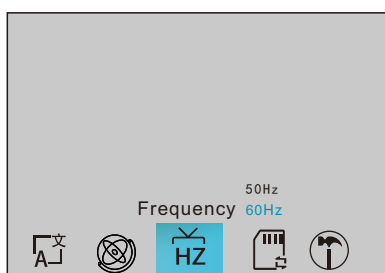
【Gyroscope Calibration】

◆ Press and hold the **MENU** button to enter the menu. In the menu interface, press **OK** to select Gyroscope Calibration. Press the **OK** button to start automatic calibration. When the calibration is completed, it will automatically save and exit.



【Frequency】

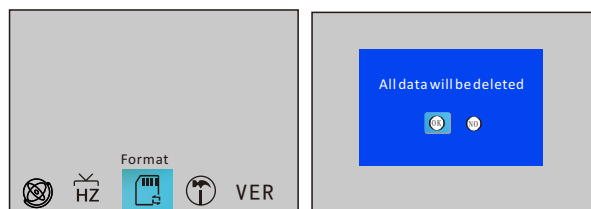
◆ Press and hold the **MENU** button to enter the menu. On the menu interface, press **OK** to select the light source frequency. Press the **MENU** button to select 50Hz/60Hz. After confirming, press and hold the **MENU** button to save and exit.



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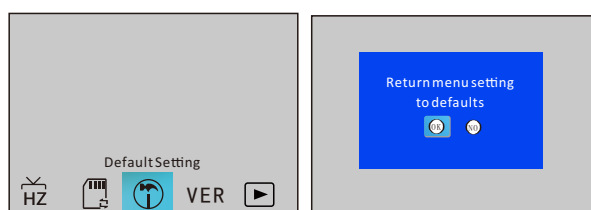
【Format】

◆ Press and hold the **MENU** button to enter the menu. In the menu interface, press **OK** to select Format. Press the **OK** button to enter the submenu. Press the **MODE** button to select OK/NO. Press the **OK** button to confirm and return.



【Default Setting】

◆ Press and hold the **MENU** button to enter the menu. Then press **OK** to select Settings in the menu interface. Press the **OK** button to enter the submenu. Press the **MODE** button to select OK/NO. Press the **OK** button to confirm and return.



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【Version】

◆ Long press the **MENU** button to enter the menu. In the menu interface, press **MODE** to select the version to view it.



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【Basic Parameters】

Thermal Imaging Parameters

Category	Item	Parameter
Optical Parameters	Sensor	256x192
	Pixel pitch	12 μm
	Objective Lens Diameter	19mm
	FOV	8°X 6°
Technical Parameter	Resolution (pixels)	768x576
	Thermal Sensitivity	≤25mk
	Detection Range	1000m
	Frame Rate (Hz)	50
	Digital Zoom	1x 2x 3x 4x
	Battery Operating Time	4 hours+
	Equipment Power Supply	Two 18350 lithium batteries (rechargeable)
Other	Size (Length x Width x Height)	127*68*60mm
	Weight	480g

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Night Vision Parameters

Category	Item	Parameter
Optical Parameters	Sensor Type	COMS
	Frame Rate (Hz)	60
	Objective Lens Diameter	12mm
	FOV	6.4°X 4.6°
Technical parameter	Resolution (pixels)	2k
	Magnification	1-5x
	Display	2 InchesHD IPS (800x600)
	Shock	≤1000g
	USB	TYPE-C
	Battery Operating Time	4 hours+
	Equipment Power Supply	Two 18350 lithium batteries (rechargeable)
Other	Size (Length x Width x Height)	127*68*60mm
	Weight	480g

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【Standard Configuration】

Name	Quantity
USB Cable	1
Color Box	1
External Power Adapter	1
User Manual	1
Rechargeable Battery	2
Lens Cleaning Cloth	1

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【Maintenance and Cleaning】

It is recommended to maintain the product appropriately to ensure its service life. Attempting to disassemble or repair the equipment will void the warranty.

When there are stains on the display screen, objective lens filter cover, or objective lens of this machine, first blow away any dust and debris on the optical components. Then use a lens cleaning cloth to gently wipe the lens. To remove oil stains or dry water spots, use a cloth or cotton swab with a small amount of denatured alcohol.

【Troubleshooting】

Do not return the product without prior authorization. Doing so may result in the loss of the product for any reason, such as sending it to the wrong address or other unexpected package-related issues.

◆ This unit will not turn on:

1. This product uses a special battery, please be sure to use the factory-configured battery and charger.

2. Check if the battery power is sufficient. If necessary, reinstall the battery.

◆ Image is darker:

Make sure to open the filter cover on the objective and turn on the IR Illuminator adjust accordingly.

Display brightness and IR Illuminator brightness for bright and clear images.

◆ There are bright spots or black spots on the display:

1. The dots appearing on the display are caused by the sensor production technology, not a defect.

◆ The image is out of focus:

1. Make sure there is no dust or condensation on the objective or eyepiece.

2. Make sure to adjust the eyepiece diopter settings for your specific vision until you can see the product clearly. Content on the internal display of the product.

3. After ensuring the display contents are clearly visible, adjust the focusing handwheel on the side of the objective lens. Adjust the focus as needed for different viewing distances.

◆ Image flickering:

This is common if the unit is looking at or pointed in the direction of a bright light source.

Refrain from bright light. If blinking under normal viewing conditions, then it may be caused by low battery power.

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【Warranty】

The warranty period is five years from the date of purchase, please keep proof of purchase in a safe place. If you have any questions about the product, please contact our distributor first. Many questions and doubts can be resolved under telephone guidance. If it still can't be solved after telephone guidance, you can send the product to our customer service center for repair. If the fault occurs outside the warranty period or man-made damage is not covered by our warranty terms, we will carry out paid maintenance.

【Precautions for Returning Goods】

◆ Ensure that the product is properly packaged and properly protected before transportation/mailing; Try to use the original packaging as much as possible.

◆ When returning the product, please include the purchase voucher, warranty card, a brief explanation of the malfunction, your contact information, and the recipient's detailed address.



Attention: Dust and Moisture Proof!

◆ After using waterproof products in high humidity environments, store them after the moisture has dissipated and the products have dried.

◆ Non waterproof products should not be used in high humidity environments, otherwise it may cause damage to product performance.

◆ After using at the seaside, gently soak a clean soft cloth with water and wipe off any remaining salt on the surface of the mirror body.

◆ If not used for a long time, please clean the lens and body thoroughly, put the product in a bag, place it in a ventilated and dry place, and add an appropriate amount of desiccant to prevent moisture.

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2025.07



THERMAL/DIGITAL
NIGHT VISION SCOPE

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