THERMFOX

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InfiRay Outdoor ● **Zoom Series** ● Operating Manual www.infirayoutdoor.com

User manual

V2.O

Zoom Series | Thermovision

ZL38/ZH38/ZH5O

IMPORTANT SAFETY INFORMATION

Environmental influences

WARNING! Never point the lens of the device directly at intense heat sources such as the sun or laser equipment. The objective lens and eyepiece may then become so hot that the internal components may be damaged. The warranty does not cover damage caused by improper operation.

Risk of ingestion

Please note: Do not place this device in the hands of small children. Improper handling may cause small parts to come loose and be swallowed.

Safety instructions

- Handle the device and battery with care: careless handling can damage the battery.
- Do not expose the device to fire or high temperatures.
- Use only the battery charger included in the package.
- The battery capacity decreases when operating in cold environments. However, this is not a fault, it is due to technical reasons.
- Always store the device in a transport bag in a dry and well-ventilated place. For long-term storage, remove the battery.
- Do not expose the device to extreme temperatures below - 20 °C and above + 50 °C.
- The device must only be connected to a USB Type-C cable.
- If the device has been damaged or the battery is faulty, please send the device to our after-sales service for repair.

Safety instructions for the power supply

- Before use, check the power supply, cable and adapter for visible damage.
- Do not use any defective parts. Defective parts must be replaced.
- Do not use the power supply in wet or humid environments.
- Use only the original cable supplied with the battery charger.
- Do not make any technical modifications to the equipment.

For further information and safety instructions, please refer to the operating instructions. All information is also available on our website in the download centre: www.infirayoutdoor.com.

Disposal of batteries

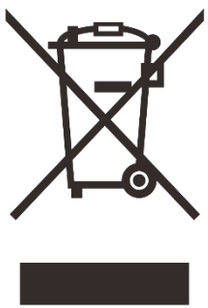
In the European Union, this symbol indicates that the battery used in this device must not be disposed of in domestic municipal waste and must be stored separately for disposal. When returning used batteries, use the collection system that is common in your country.

The materials and substances in batteries can have a harmful impact on health and the environment. By storing empty batteries in a recycling facility, you are helping to protect, maintain and improve the quality of our environment.

Please return only dead batteries.

The battery used does not contain mercury, cadmium or lead in excess of the limits set in Directive 2006/66/EC.

Information for users on the disposal of electrical and electronic equipment (households)



The WEEE symbol on products and/or accompanying documents indicates that used electrical and electronic products must not be mixed with normal household waste. For proper treatment, recovery and recycling, take these products to the appropriate collection points where they will be accepted free of charge. In some countries it may also be possible to return these products to the local the retailer when buying the corresponding new product. Proper disposal of this product serves to protect the environment and prevent potential harmful effects on humans and their environment that may result from improper waste management.

Please contact your local authority for details of your nearest collection point. In accordance with national legislation, penalties may be imposed for improper disposal of this type of waste.

For business customers within the European Union

Contact your dealer or supplier for disposal of electrical and electronic equipment. They will provide you with further information.

Information on disposal in other countries outside the European Union

This symbol is only applicable in the European Union. If you wish to dispose of this product, please contact your local authority or retailer to request disposal.

Purpose of use

The device is designed for imaging heat signatures in nature observation, remote hunting observations and for civilian use. This device is not a toy for children.

Use the device only as described in this User Guide. The manufacturer and the dealer are not liable for any damages resulting from inadvertent or improper use.

Function check

- Make sure your device is not visibly damaged before use.
- Test that the device displays a clear, unobstructed image.
- Check that the image settings of the thermal imaging rifle scope are correct. See notes in section 9 - Switching on and setting the image.

Installing/removing the battery

The ZOOM series thermal imaging rifle scope is equipped with a battery set. The battery pack can be moved and charged, see section 7 - Battery pack for details.

1 Specifications

Model	ZL38	ZH38	ZH50
Detector specifications			
Type	Uncooled Vox		
Resolution，pixels	384×288	640×512	
Pixels, μm	12		
NETD, mK	≤ 25		
Frequency, Hz	50		
Optics specifications			
Lens, mm	19/38	19/38	25/50
F-number (aperture number)	0.9/1.2	0.8/1.0	0.88/1.1
Field of view, degrees	13.9 ×10.4 / 6.9 × 5.2	22.9 × 17.2 / 11.5 × 8.7	17.5 × 13.1 / 8.7 × 6.6 /
Optical magnification, ×	2.7~21.3	1.6~12.8	2.2~17.6
Digital zoom	1× / 2× / 3× / 4×		
Output distance pupils, mm	20		
Output pupil diameter, mm	5.5		
Diopters, D	-5 ~ +5		
Detection range, m (Target size: 1.7 m × 0.5 m, P(n)=99%)	987/ 1974	987 / 1974	1298 / 2596

Display			
Type	FHD OLED		
Resolution, pixels	1440×1080		
Dimensions, inch	0.4		
Batteries			
Batteries	Li-ion Battery Pack / 4400mAh / DC 3.7V		
Operating voltage, V	3 ~ 4.2		
External voltage, V	5 (USB Type-C)		
Physical specification			
Maximum operating time (t=22℃), h★	12	10	
Memory capacity, GB	32		
Operating temperature, ℃	-20 ~ +50		
Weight, g	540	580	650
Dimensions, mm	190×65×60	190×65×60	195×65×60

- Actual operating time depends on the frequency of Wi-Fi use, photography, video recording, etc.
- Improvements may be made to the design and software of this product to enhance its functionality.
- If any change is made to the technical specifications of the product, it will be made without prior notice to the customer.

2 Package contents

- ZOOM series thermal imaging rifle scope
- Carrying bag
- IBP-1 battery × 2
- IBC-1 battery charger
- Power adapter
- Data cable
- Neck strap
- Wrist strap
- Lens cleaning cloth
- A brief introductory guide

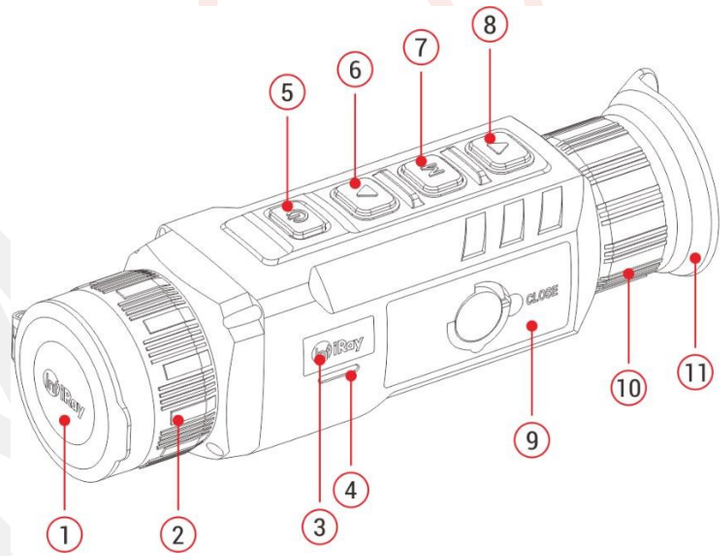
3 Product description

The ZOOM series thermal imaging riflescopes are thermal imaging devices integrating observation, thermal spot tracking, photography and video recording, Wi-Fi connectivity, etc. The dual field of view lens allows quick manual switching of the field of view. You can use the wide field of view to search for targets and then use the narrow field of view to confirm the target and identify it. The above mentioned feature makes the target search very easy. By adopting the principle of thermal imaging, no external light source is needed, at the same time the device is not affected by strong light. You can use it to observe objects hidden behind obstacles such as branches, tall grass and bushes regardless of night or day, including harsh weather (rain, snow, fog and haze). The device can therefore be used in night hunting, observation, geo-positioning, search and the implementation of rescue operations.

4 Functions

- Lens with two fields of view
- 12μm self-ejecting detector
- High image quality
- FHD OLED (1440×1080)
- Rechargeable battery for quick replacement
- 50 Hz high frame rate
- Eyepiece supporting 20× zoom
- Digital zoom: 1×/2×/3×/4×
- Built-in 32 GB memory, supporting photo and video recording
- Built-in Wi-Fi module, supporting the InfiRay Outdoor app
- Built-in digital compass and motion sensor
- Ultra-bright mode
- Support for PIP, defective pixel correction and other features
- Convenient operating interface

5 Components and buttons



1. Lens cap7

. Menu button (M)

2. Focusing ring

8. Down button

Lens

3. Status light9

. Battery

4. Microphone/Altimeter10

. Eyepiece

5. Power button (P)

11. Shade

6 Button control

Button	Default state	Press briefly	Hold
Power button ⏻	Off	–	Switch on the device
	Home screen	Device standby mode	Turn off the device
	Standby mode	Waking up the device	–
	Main menu interface	Return to the top menu without saving changes	–
	Defective pixel correction interface	Add/Remove defective pixels	–
Up button ▲	Home screen	Digital zoom	Turning the PIP function on/off
	Menu interface	Navigation to the top	–
Menu button M	Home screen	Opening local offers	Go to the main menu
	Local menu interface	Switching and confirming parameters	Saving a return to home screen
	Main menu interface	Enter submenu / Switch and confirm parameters	
	Defective pixel correction interface	Confirm selection / Save position	–
Down button ▼	Home screen	Take a photo	Start recording video
	Menu interface	Navigating downwards	–
	Video recording	Take a photo	Stop recording video
Up button + menu button	Home screen	–	Switching on/off the stadiametric rangefinder

Down button + menu button	Home screen	–	Switching on/off function tracking heat points

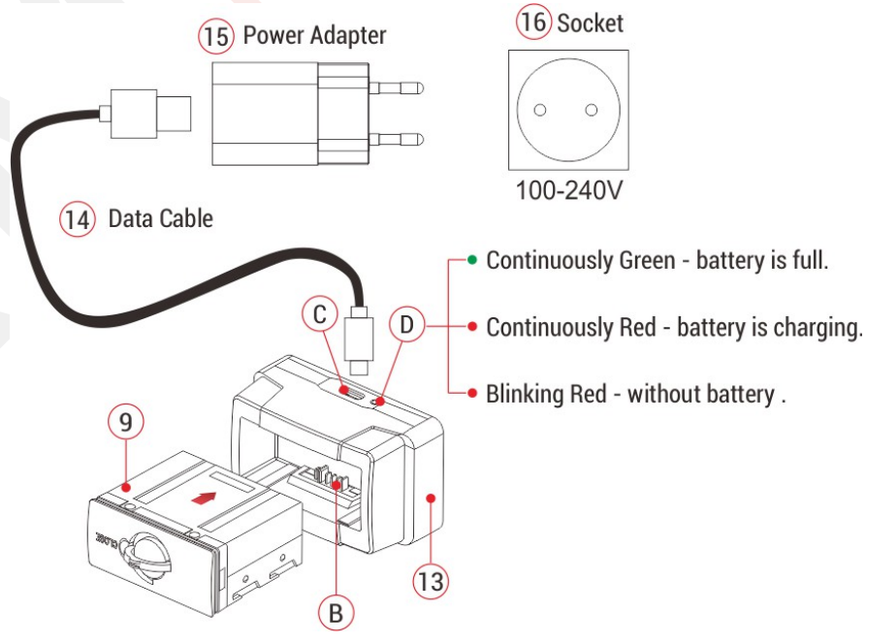
7 Accumulator

ZOOM series devices use a rechargeable lithium-ion battery IBP-1, with a battery operating capacity of 10 hours. Charge the battery before first use.

Method 1: Charging with a battery charger

- Align the pins (**A**) of the battery **(9)** with the groove (**B**) of the battery charger **(13)** and insert the battery (**9) into** the battery charger **(13).**
- Connect the plug of the type C data cable **(14)** to the **(C)** port of the battery charger (**13).**
- Plug the other plug of the data cable **(14) into** the USB port of the power adapter (**15).**
- Plug the power adapter (**15**) into a 100 V - 240 V socket **(16)** and charge the battery.
- After installation, the LED indicator (**D**) on the battery charger **(13)** will start

  light up or flash.
- If the indicator is permanently red, the battery module is charging.
- If the indicator turns green, the battery module is fully charged.
- If the indicator flashes red, the battery charging bracket is connected to a power source but the battery module is not installed.
- When fully charged, remove the battery from the battery charger **(13).**

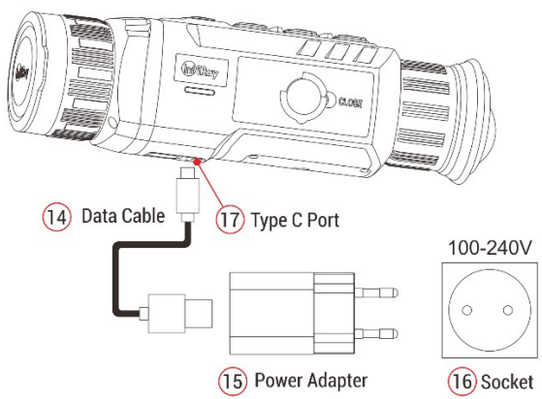


Method 2: Charging via Type-C port

- Open the Type-C port cover **(17)** on the bottom of the serial device

Zoom.

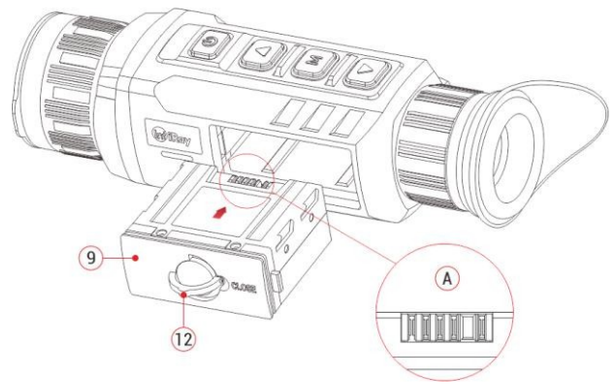
- Connect the end of the Type C data cable (**14)** to the Type C port **(17).**
- Connect the other end of the data cable (**14)** to the power adapter **(15).**
- Plug the adaptor into a 100-240 V socket **(16)**.
- The battery icon on the display changes to the charging icon .
- While the battery is charging via the Type C port, the status light **(3)** on Zoom series devices will also change to show the battery status.
  - If the indicator light is solid orange, the battery module is charging.
  - If the indicator light is green, the battery is fully charged.



Installing the battery

1. Pull the ring (**12**) out of the battery module **(9)** and turn it clockwise until it is horizontal with the battery **(9).**
2. Align the battery pins (**A**) of the battery pack **(9)** with the groove of the device and install the battery pack **(9)** inside the Zoom Thermal Imager.
3. When the battery **(9) is** fully inserted into the Zoom Thermal Imager body, turn the ring **(12)** 90 degrees counterclockwise to lock the battery **(9)**. Pull the ring **(12)** vertically.
4. After installation, slide the ring **down (12).** When the bulge on the ring **(12**) indicates "**CLOSE"** on the battery (**9**)**, the** battery **(9) is** installed.

- The Zoom series can only be powered by this battery **(9).** At using other batteries can cause irreparable losses, damage to the equipment and even fire.



Safety precautions for the battery

1. **Use only the battery charger (13) supplied with the battery (9).** Using any other charger may irreparably damage the battery or charger and cause a fire.
2. After a long period of storage, the battery should be partially charged, not fully charged or discharged.
3. Do not charge the battery immediately after moving it from a cold environment to a warm environment. Wait 30 to 40 minutes for it to warm up.
4. Do not charge the battery without supervision.
5. Do not use the charger if it is modified or damaged.
6. Charge the battery in an environment between 0 °C and +45 °C. Otherwise, battery life will be reduced.
7. Charging time should not exceed 24 hours.
8. Do not expose the battery to high temperatures or open flames.
9. Do not immerse the battery in water.
10. Do not connect external devices with current consumption that exceeds the permitted level.
11. The battery is equipped with a short-circuit protection function. However, any situation that could cause a short circuit should be avoided.
12. Do not disassemble or modify the battery without professional guidance.
13. Do not tap or drop the battery.
14. The battery capacity may decrease when using the battery in negative temperature, which is normal, it is not a fault.
15. Do not use the battery at a temperature higher than the temperature listed in the table, battery life could be reduced.
16. Keep the battery out of the reach of children.

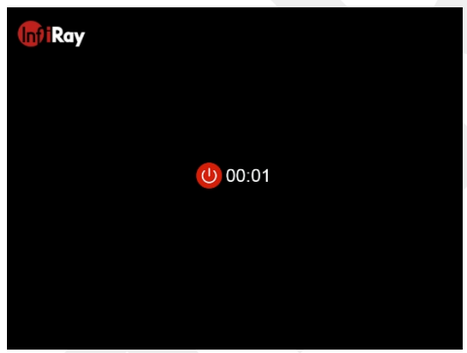
8 External power supply

Zoom devices can be powered by an external power supply such as a power bank (5 V).

1. Connect an external power supply to the Type C port **(17)** on the bottom of the Zoom Thermal Imaging Device.
2. The device switches to an external power source and simultaneously charges the internal battery.
3. The battery icon will be changed to the charging icon.
4. If the device is connected to an external power source and no battery is installed, the battery icon will change to the USB icon.
5. When the external power supply is disconnected, the Zoom thermal imager automatically switches to battery power without shutting down.

9 Switching on and adjusting the picture

- Remove the lens cap **(1).**
- Press and hold the **power** button **(5)** to switch on the device. The home screen will then appear after a few seconds.
- Turn the eyepiece diopter ring **(10)** until the image in the eyepiece becomes clear. After adjustment, there is no need to adjust it for of the same user.
- Rotate the focus ring **(2) of** the lens to focus on the subject.
- To adjust the picture mode, display brightness, picture sharpness, image contrast, etc., go to the **Local Menu** section of this guide.
- After using press a hold down the **power** button **(5)**, the power-off countdown will be displayed. Release the button after the countdown. Thermal imaging is switched off.



10 Calibration

Thanks to the shutterless thermal imaging of the Zoom series, high-quality images can be captured without a mechanical shutter.

In Rare cases, once is image degraded or is uneven, it can be improved by calibration. There are two calibration modes:

- From the home screen, briefly press the **up button (6)** and **down (8) to** calibrate without closing the lens cap (the internal shutter covers the sensor).
- Close the lens cap, press and hold the **up button (6)** and **Down (8). The** text prompt "Cover lens during calibration" appears on the screen. Background calibration will start after 2 s.

11 Digital zoom

Zoom Series devices support fast digital zooming of images to increase visual magnification.

- From the home screen, briefly press the **up button (6)** to circular magnification of the image.

- The corresponding magnification is displayed in the status bar.
- The following table shows visual magnifications from 1× to 4×.

Model	Focal length	Digital zoom			
		1×	2×	3×	4×
ZL38	19 mm	2.7	5.4	8.1	10.8
	38 mm	5.3	10.6	15.9	21.2
ZH38	19 mm	1.6	3.2	4.8	6.4
	38 mm	3.2	6.4	9.6	12.8
ZH50	25 mm	2.2	4.4	6.6	8.8
	50 mm	4.4	8.8	13.2	17.6

12 Photography and video recording

The Zoom Series thermal imaging camera features 32 GB of built-in memory storage and supports photography and video recording. Photo and video files will be named after the time, so it is recommended that you set the system date and time in the main menu before using the photo and video functions (see **Main Menu - Settings - Date/Time Settings** in this manual), or synchronise the system date and time in the InfiRay Outdoor settings. For details, please refer to the application manual on our official website (www.infirayoutdoor.com).

Photography

- From the home screen, press the **down button (8)** to take a photo. The image freezes for 0.5 s and the top left corner of the The camera icon flashes. The icon disappears when the picture is taken.
- Images are saved to the built-in memory storage.

Video recording

1. From the home screen, press and hold the **down button (8)** to start recording video.
2. The recording icon and the recording time information are displayed in upper left corner of the display and the time is in HH:MM:SS (hour:minute:second) format.
3. The red dot on the left side of the time prompt will flash continuously while recording.
4. You can also take a photo during recording by pressing

down button (8).

- Press and hold the **down button (8)** to stop and save the video.
- All videos and photos will be stored in the built-in memory storage.
- There is a built-in microphone function in the Zoom Series thermal imaging camera that will automatically enabled when you start recording video, the microphone icon will appear in the status bar at the top of the screen.
- When the video recording function is turned off, the microphone function is turned off and the icon in the status bar will automatically disappear.

Note

- You can enter and work in the menu while the video is being recorded.
- The captured image and recorded video will be saved in the IMG_yyyyMMddHHmmss.jpg formats and VID_rrrrMMddHHmmss.mp4 on the built-in memory card (rrrrMMddHHmmss-year, month, date, hour, minute and second);
- The maximum file duration for video recording is 30 minutes. If the duration is longer than 30 minutes, the video is automatically recorded to a new file.
- Due to limited storage space, it is recommended regularly clean your memory or move pictures and videos to other storage media to free up the device's memory space.

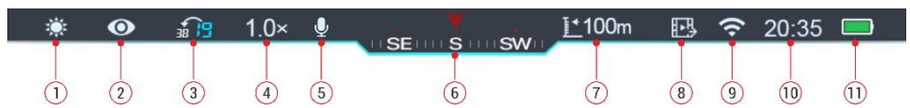
Memory access

When the device is turned on and connected to the computer, the computer recognizes it as a flash memory card. You can then access the device's memory and copy pictures and videos.

1. Connect the device to your computer using a data cable.
2. Switch on the device.
3. Double click on "This computer" on the desktop - double click to open the device named "Infiray" - double click to open the device name "Zoom_Storage" to access the memory.

4. Files named by time will be displayed when memory is accessed.

13 Status bar



The status bar is at the top of the display and indicates the current operating status of the thermal imaging system. The content of the display from left to right is as follows:

- Current picture mode (: warm-white; : warm-black; : hot-red; : pseudo-color; : target highlight)

- Ultra-bright mode status: (: Ultra-bright mode is off; : Ultra-bright mode is on)
- Current focal length of the lens
- Current magnification (for example 2.0×)
- Microphone (displayed during video recording)
- Compass (when on)
- Current altitude (when enabled)
- Video output (when on)
- Wi-Fi status (: Wi-Fi is off; : Wi-Fi is on)
- Time
- Battery module status

Icon	Colour/Stave	Battery status
	Green	More than 40%
	Žluta´	20 % - 40 %
	Č˘red´	Less than 20%, battery needs to be charged
	Flash icon Inside	External battery power supply
	USB icon	External power supply without battery in facilities

14 Local offer

From the local menu, you can quickly adjust basic configurations for commonly used features, including picture mode, display brightness, picture sharpness and picture contrast.

- From the home screen, press the **M** button **(7)** to the local offer.
- Press the **up (6) / down (8)** button to toggle the following options.
- **Image mode:** Press the button **M (7)** to change Picture mode (warm white, warm black, warm red, pseudo-color a nd target highlight).

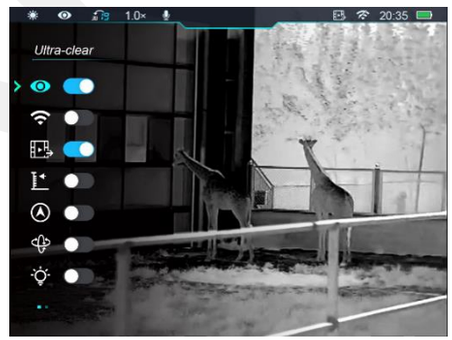
- **Image brightness**: Press the **M** button **(7)** to change the brightness of the image from level 1 to level 5.
- **Image sharpness:** Press the **M** button **(7)** to change the image sharpness from level 1 to level 5.
- **Image contrast**: Press the **M** button **(7)** to change the image contrast from level 1 to level 5.

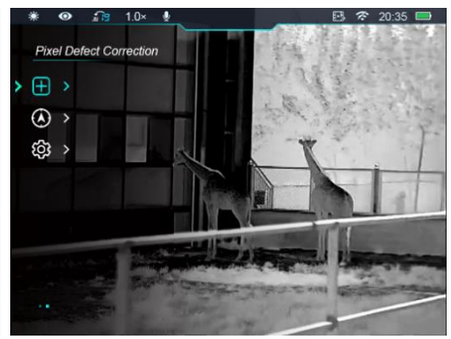
- Press and hold the **M** button **(7)** to save your changes and return to the home screen.

Note: If no operation occurs in the local menu within 5 seconds, the device automatically saves the changes and returns to the home screen.

15 Main offer

1. From the home screen, press and hold the **M** button **(7)** to access the main menu.
2. Press the **up (6) / down (8)** button to switch menu options.
3. The function options in the main menu are cyclical: when the > arrow reaches the last option on the first page, it changes to the first menu option on the second page. When the > arrow reaches the first option on the first page, press the **up** button **(6) to** switch to the last option on the second page.
4. Press the **M** button **(7)** to change the parameter settings of the current menu option or to open a submenu.
5. In the second and third level submenu, press the **up (6) / down** button **(8)** to select a parameter or function; press the **M button (7)** to confirm the selection. A flashing icon indicates that changes are being saved, then the top menu or submenu;
6. In any menu interface, press the **power** button (5) to return to the top menu or home screen without saving changes, press and hold **the M button (7)** to save changes and return to the home screen.
7. In any menu interface, the device will automatically return to the home screen without saving changes if no operation is performed within 15 seconds.
8. During continuous operation of the thermal imaging system, the cursor arrow > remains in position when leaving the main menu before exiting. When you restart the thermal imager and enter the main menu for the first time, the cursor will remain on the first menu option.

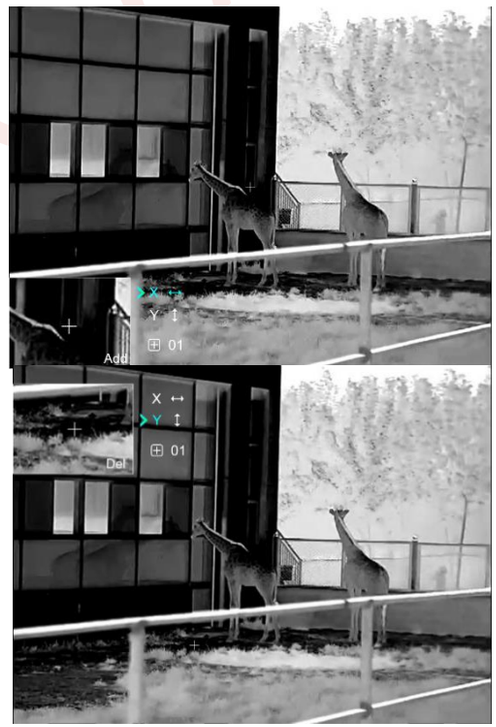


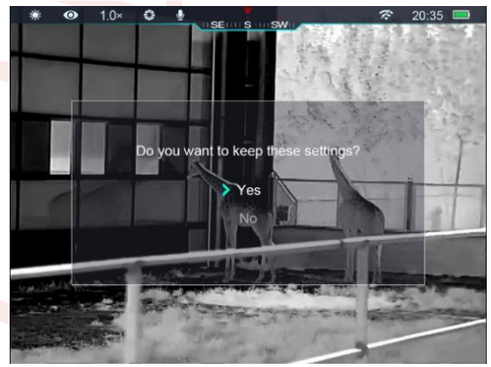
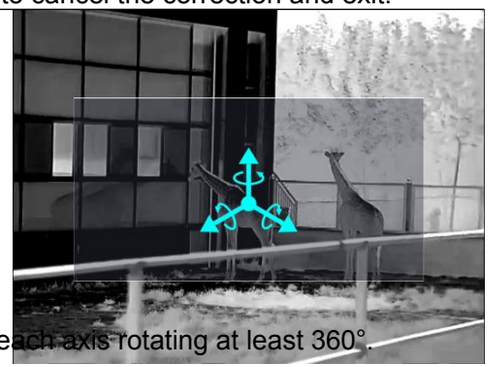


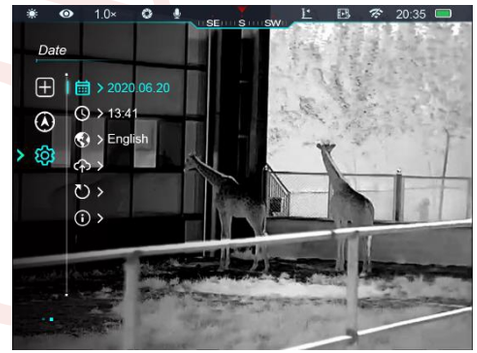
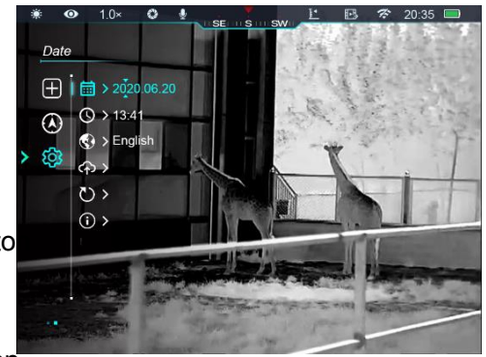
Main menu options and description

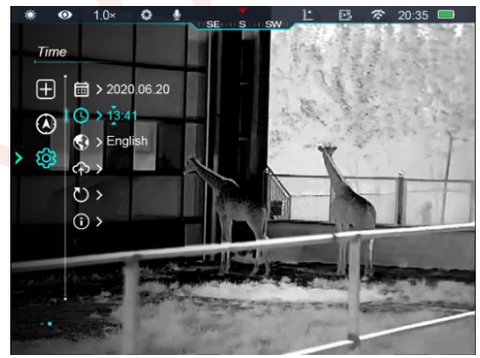
Ultra-bright mode 	**Turning Ultra-bright mode on/off** • Press and hold the **M** button **(7)** to enter the main menu. • Select the "Ultra-clear" option using the **up (6) / down (8)** button**.** • Turn Ultra-bright mode on/off by briefly pressing the **M** button **(7),** during which you will hear the shutter calibration click. • When the function is switched on/off, the icon in the status bar will change accordingly. • When Ultra-Bright Mode is enabled, image contrast is enhanced, making it suitable for rainy, foggy and other harsh conditions.
Wi-Fi 	**Wi-Fi on/off** • Press and hold the **M** button **(7)** to enter the main menu. • Press the **up (6) / down (8)** button to select **Wi-Fi**. • Switch Wi-Fi on/off by briefly pressing the **M** button **(7)** • When the function is switched on/off, the icon in the status bar will change accordingly.
Video output 	**Turning the video output on/off** • Press and hold the **M** button **(7)** to enter the main menu. • Press the **up (6) / down (8)** button to select "**Video Ooutput**". • Press the **M** button **(7)** briefly to switch the video on/off. • When video output is turned on, the video output icon appears in the status bar at the top.
Altimeter 	**Switching the altimeter on/off** • For accurate measurements, connect to the app for calibration before using the altimeter. • Press and hold the **M** button **(7)** to enter the main menu.

	• Press the **up (6) / down (8)** button to select the **altimeter** option. • Press the **M** button **(7)** to switch the altimeter on/off. • When the function is switched on, the altimeter values are displayed in the status bar at the top.
Digital compass	**Switching the digital compass on/off** • Press and hold the **M** button **(7)** to enter the main menu. • Press button **up (6) / down (8)** Select option "**Digital Compass**". • Press the **M** button **(7)** to switch the digital compass on/off. • When switched on, the digital compass is displayed in the middle of the status bar at the top. 
Motion sensor	**Switching the motion sensor on/off** • Press and hold the **M** button **(7)** to enter the main menu. • Press button **up (6) / down (8)** Select option "**Motion sensor**". • Press the **M** button **(7)** to switch the motion sensor on/off. • When the motion sensor is activated, its function is displayed on both sides of the screen. • The curved ruler on the left represents the tilt angle and the vertical ruler on the right represents the pitch angle. 
Status light	**Switching the status light on/off** • Press and hold the **M** button **(7)** to enter the main menu. • Press the **up (6) / down (8)** button to select "**Status Light**". • Press the **M** button **(7)** to switch the status light function on/off.

	• The status light will flash steady green during normal operation and will flash red during standby mode.
Defective pixel correction	**Fix defective pixels** When using thermal imaging, you can see defective pixels such as visible bright spots or dark spots with stable brightness. To solve this problem, use the defective pixel correction function. • Press and hold the **M** button **(7)** to enter the main menu. • Press the **up (6) / down (8)** button to select **"Pixel Defects Correction"**. • Press the **M** button **(7)** to enter the defective pixel correction interface. The PIP function is automatically enabled and displayed in the lower left corner by default. • The right side of the PIP window displays the direction of cursor movement (X-axis, Y-axis) and the number of corrections for defective pixels. • Press the **M** button (7) to change the direction of movement and press the **up (6) / down (8)** button to move the cursor. • Repeat the previous steps to change the cursor location until does not reach the position of the faulty pixel. 

	• Press the **power** button **(5)** to add the defective pixel. The word "**Add**" appears in the PIP window and the defective pixel is added. • At the same position, you can undo the correction of the defective pixel by pressing the **power** button **(5)** again. "Del" will then be displayed in the PIP window. • Each time you add or remove a defective pixel, the number of defective pixels changes accordingly. • When the cursor moves near the PIP, the PIP icon and the content on the right will automatically move to the top left corner. • After making the correction, press and hold the **M** button **(7) until you** are prompted to confirm whether you want to save the correction. You can select "**Yes**" to save the correction and exit, or select "**No**" to cancel the correction and exit. 
Calibrating the compass	**Calibrating a digital magnetic compass** • Press and hold the **M** button **(7)** to enter the main menu. • Press the **up (6) / down (8)** button to select "Compass Calibration". • Press the **M** button **(7)** to enter the compass calibration interface. The screen will prompt you to calibrate. • Rotate the thermal imaging camera along the three axes marked by the icon, with each axis rotating at least 360°. • After 15 s, the calibration is complete and the local menu is automatically terminated. 

<table>
<tr><td rowspan="3">General settings</td><td colspan="2">General settings
Press and hold the M button (7) to enter the main menu.
Press button up (6) / down (8) Select option "General Settings".
Press the M button (7) briefly to enter the submenu.
This menu item allows you to configure the following settings:  </td></tr>
<tr><td>Date</td><td>Setting the system date
In the General Settings submenu, select the "Date" menu option with the up button (6) / down (8).
The date is in RR/MM/DD format.
Press the M button (7) briefly to activate the Date submenu. Two triangle icons will appear above and below the value.
Switch between year, month and day by briefly pressing the M button (7).
Set the correct year, month and day by briefly pressing the butto up (6) / down (8).
Press and hold the M button (7) to save and exit the application.  </td></tr>
<tr><td>Time</td><td>Setting the system time
In the General Settings submenu, select the "Time" menu option with the up (6) / down (8) button.</td></tr>
</table>

		• The time format is displayed as **HH:MM** in 24-hour format. • **Press the M** button **(7)** briefly to activate the Date submenu. Two triangle icons will appear above and below the value. • Select the correct value for the hour and minute by briefly pressing the **up (6) / down (8)** button**.** • Switch between hour and minute by briefly pressing the **M** button **(7).** • Press and hold the **M** button **(7)** to save and exit the application. The time in the status bar will change accordingly will change. 
	Language	**Setting the system language** • In the **General Settings** submenu, select the "**Language**" menu option with the **up** button. **(6) / down (8).** • To enter the **Language** submenu, briefly press the **M** button **(7).** • Select the desired language by briefly pressing the button **up (6) / down (8).** • Press the M button **(7) briefly** to confirm the selection. At the same time, the settings are automatically saved and the general settings submenu is closed. 
		Firmware updates for Zoom devices

	Firmware Actualization	Before updating, you must copy the downloaded firmware program to the Zoom's embedded storage. • Connect Zoom to your computer and turn Zoom on. • Open the ZOOM_Storage folder and create new "update" folder names on your computer. • Copy the downloaded firmware program (.zip) to the update folder in ZOOM_Storage. • Then, in the **General Settings** submenu, select the "**Firmware Update**" **menu** option using the **up (6) / down (8**) button. • Open sub-menu **Update firmware** by briefly pressing the **M** button **(7).** • Short press the **up (6) / down (8)** buttons to select Yes or No. Select **Yes** to confirm the update and select **No** to cancel the update. • Confirm your selection by briefly pressing the **M** button **(5).** • If Yes is selected, the thermal imaging system will automatically update and restart. 
	Restore factory settings	**To restore the factory default settings** • In the **General Settings** submenu, select the "**Factory Reset**" menu option using the **Up (6) / Down (8)** button**.** • Enter the **Factory Reset** submenu by briefly pressing the **M** button **(7).** • Press the **up (6) / down (8)** button to select Yes or No. Yes means factory reset, No means cancel the operation.

		• Confirm your selection by briefly pressing the **M** button **(5).** • If Yes is selected, the thermal imaging system will automatically restart. • If No is selected, the operation is cancelled and the screen returns to the main menu. When you select Factory Reset, the following functions will be restored to their default settings: • **Image mode:** Warm White • **Ultra-clean mode:** Off • **Digital zoom:** 1× magnification • **Compass:** off • **Wi-Fi:** Off • **Motion sensor:** off 
	Information 	**View system information** • In the **General Settings** submenu, select the **"Info"** menu option using the **up** button. **(6) / down (8).** • The relevant device information is displayed by briefly pressing the **M** button **(7**). • This item allows the user to view the following information about the current thermal imaging device: product model, GUI, FPGA, PN, SN, hardware version number, etc. • Press and hold the **M** button **(7)** to return to the submenu General settings. 

Note: Digital compass, motion sensor and video output functions are not available on Zoom ZL38.

16 PIP function

Picture-in-Picture (PIP) provides a floating window independent of the entire screen. This window displays a portion of the image that is enlarged to 2x in a specific area centered on the intentional cross of the main image.

- From the home screen, press and hold the **up** button **(6)** to turn the PIP function on/off.
- When you press the **up** button **(6)** to enlarge the main image, the image in the PIP window will also be enlarged accordingly

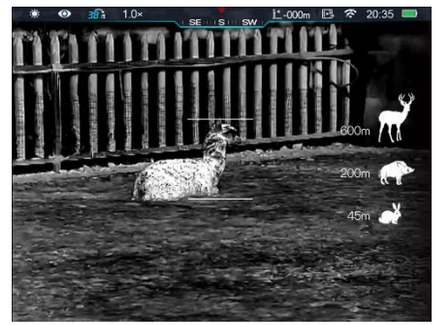
magnified. If, for example.

the main image is enlarged 1×, 2×, 3× or 4×, the image will be in the window

PIP magnified 2×, 4×, 6× or 8×.

17 Stadiametric rangefinder

- From the home screen, simultaneously press and hold the **Up** (**6**) + **M (7)** buttons to turn the stadiameter function on/off.
- When this function is enabled, two horizontal lines used for measurements will appear on the screen, and the icons of the three preconfigured objects and the measured values will appear on the right side.
- The dimensions of the three predefined objects are:
  - Deer: height 1,7 m
  - Wild boar: height 0,9 m
  - Hare: height 0,2 m



- Position the target in the centre of the screen and align the horizontal lines with the target

  long or short press the **Up (6) / Down (8)** button**.**
- The icon on the left shows the approximate distance of the corresponding target.
- Long press the **M** button **(7)** to exit the stadiametric measurement function.

18 Monitoring of thermal points

Zoom Series devices provide a heat spot tracking feature that allows you to track the hottest object in the image.

- From the home screen, press and hold down the **M (7)** + **Down (8)** buttons to switch the function on/off heat point monitoring.
- When this feature is enabled, a blue box appears in the image that automatically tracks the hottest object.

19 Wi-Fi features

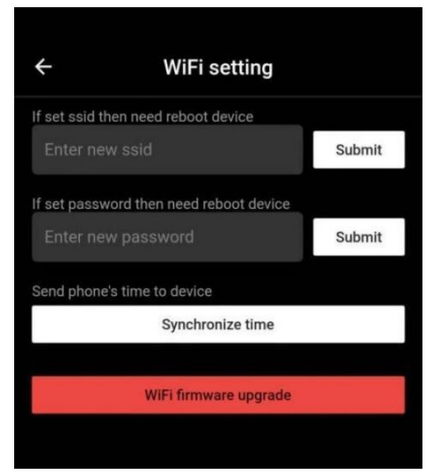
Zoom devices have a built-in Wi-Fi module. The device can be connected to an external device (computer or mobile phone) via Wi-Fi.

- From the main menu, enable Wi-Fi on the device (see main menu functions for details on specific operations).
- After turning on Wi-Fi, search for a Wi-Fi named ZOOM_XXXXXXXX on the external device, where XXXXXX is the serial number of the device.
- Select Wi-Fi, enter your password and connect. The initial password is 12345678.
- Once a Wi-Fi connection is established, you can control the device via the mobile app.

To set a Wi-Fi name and password

Zoom devices allow you to change the Wi-Fi name and password in the app.

1. In the app, find the settings icon. - touch it to enter
2. Enter and submit a new Wi-Fi name (SSID) and password in the text box.
3. After sending the change, reset the device and activate the settings.



Attention! After resetting the device to factory settings, the Wi-Fi name and password will also be reset to the factory default settings.

20 Update Application InfiRay Outdoor

The Zoom series thermal imaging camera supports control via the **InfiRay Outdoor** app, which allows you to transmit real-time images, control the device and update the program by connecting a smartphone or laptop via Wi-Fi.

The InfiRay Outdoor User Guide is available for download on our official website (www. infirayoutdoor.com).

About InfiRay Outdoor

- You can download and install the **InfiRay Outdoor** app via our official website (www. infirayoutdoor.com) or the app store. Alternatively, you can scan the QR code below to download the app for free.

- Once installation is complete, open the InfiRay Outdoor app.
- If your device has been connected to a mobile device, turn on mobile data on the mobile device. Once connected, the app will automatically prompt you to update. Click on **the** "Now" to download the latest version immediately or click "**Later**" to update later.
- **InfiRay Outdoor** can automatically save the last connected device. So once you have previously connected to **InfiRay Outdoor**, the app automatically detects the update even if the device is not connected to your phone or laptop.
- If an update is available and your mobile device has internet access, you need to download it first. Once the device is connected to the mobile device, it will be automatically updated.
- After the update is installed, the device automatically restarts.

21 Technical inspection

Before using the equipment, perform a technical check and check the following items each time:

- Outside of the device (no crack on the cover).
- Lens and eyepiece (no cracks, oil, stains or other deposits)
- Rechargeable battery status (pre-charged) and electrical contact (no salting or oxidation).

22 Maintenance

Maintenance should be carried out at least twice a year and includes the following steps:

1. Wipe the surface of the metal and plastic parts with a cotton cloth to remove dust and dirt. Silicone lubricant can also be used for the cleaning process.
2. Clean the electrical contacts and battery slots on the device with a non-greasy organic solvent.
3. Check the glass surface of the eyepiece and lens. If necessary, remove dust and sand on the lens (it is ideal to use a non-contact method). Use a special wiper tool and solvent to clean optical surfaces.

23 Troubleshooting

The following table lists all the problems that may occur during use. Check and solve the problems by referring to this table. If you encounter a malfunction not listed in this table, or cannot correct the malfunction, return the equipment to the dealer or supplier for troubleshooting.

Failure	Possible causes	Solution
Thermal imaging cannot be started.	The battery is dead	Charge the battery
Facilities Cannot be powered external power supply	USB cable is damaged	Replace the USB cable
	External power supply is insufficient	If necessary, check the external power supply
The picture is too dark	Display not bright enough	Adjust the brightness of the display
The picture quality is poor or shortens the detection range	These problems are likely to occur when you use the device in harsh weather (for example, snow, rain and fog).	
The device cannot be connected to a smartphone or computer	The Wi-Fi password is incorrect	Enter the correct password
	There are too many Wi-Fi networks within range of the device, which can cause interference	To enable stable access k network, We recommend moving the device to an area with a limited number of Wi-Fi networks or to an area without Wi-Fi coverage
Wi-Fi signals are lost or interrupted.	The device is outside Wi-Fi coverage. There is a blockage between the device and the receiver (for example, a concrete wall).	Move your device to a location where you can receive Wi-Fi signals.
If the device is used at low temperature, the display quality is worse than at normal temperature.	At temperatures above 0 °C, the temperature rise varies depending on the observed objects (environment and background) due to different thermal conductivity coefficients. As a result, high temperature contrast and image quality is improved. At low temperatures, the observed targets (background) usually cool down to a similar temperature due to the reduced thermal of contrast. Therefore, the image quality (especially details) is poor, which is characteristic of thermal imaging equipment.	

24 Legal and regulatory information

Frequency range of the wireless transmitter module:

WLAN: 2.4 12-2.472GHz (EU only)

Wireless transmitter module power <20dBm (EU only)

InfiRay Technology Co., Ltd. hereby declares, that the ZOOM series thermocouples comply with Directives 2014/53/EU and 2011/65/EU. The full EU Declaration of Conformity and further information is available at: www.infirayoutdoor.com.

This equipment can be operated in all EU Member States.

FCC Statement

FCC-ID: 2AYGT-ZOOM

Conditions for FCC designation

This device complies with Part 15 of the FCC Rules. Operation of this equipment is subject to the following two conditions: (1) This equipment shall not cause harmful interference; (2) This equipment shall accept all interference, including interference that may cause undesired operation.

Information for users

Any changes or modifications not expressly approved by the party responsible for authorizing them may void the user's authority to operate the equipment.

Note: The manufacturer is not responsible for any interference to the radio or TV caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to use the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These Limits are designed to provide reasonable protection from harmful interference in a populated area. This equipment may radiate radio frequency energy when in use and, unless installed and used in

in accordance with the instructions, may cause harmful interference to radio

communications. However, there is no guarantee that interference will

not occur within the installation of the equipment. If the equipment

causes harmful

interference to radio or television reception (which can be detected by

switching the device off and on), the user is advised to attempt to remedy

the situation by one or more of the following measures:

- Change the orientation or location of the receiving antenna.
- Increase the distance between the device and the receiver.
- Connect the device to an outlet on a different circuit than the one to which the receiver is connected.
- Ask your dealer or an experienced radio/TV technician for help.

This equipment complies with the FCC radio frequency exposure limits for uncontrolled environments.

Wearing on the body

This device has been tested for typical body functions. A minimum distance of 0.5 cm must be maintained between the user's body and the handset, including the antenna, to meet RF exposure requirements. Belt clips, holsters and similar accessories used with this device should be free of metallic components. Accessories that do not meet these requirements may not meet the exposure requirements

high-frequency radiation and should be avoided. Use only the supplied or

approved antenna.