



THERMFOX

# Tube series Operating Instructions

V1.0



**InfiRay Technologies Co., Ltd.**

## Specifications

Model	TD50L
Resolution, pixels	1440 × 1080
Frame rate, Hz Lens	50
lens, mm Field of view,	50 (F1,2)
°	6.6 × 4.9
Magnification x	4.0 (16.0)
Smooth zoom	Supported 70
Eye relief, mm	-4~+4
Dioptric adjustment, D	LCOS
Type	1280 × 960
Resolution, pixels Video	1440 × 1080
recording resolution, pixels	1440 × 1080
Sensing resolution, pixels	600
Detection range, m	Built-in 6600mAh battery and replaceable 1500mAh battery
Batteries	>13
Max. Operating time (at temperature=22°C), h*	5 V (type C)
External power supply	30
Riflescope body diameter for mounting rings, mm	1000
Max. Force of recoil of weapon with bore, g/s <sup>2</sup>	IP67
Degree of protection, IP code	16
Built-in memory size, GB Weight	<1000
(without removable battery), g	39585×75
Dimensions, mm	Supported
APP	Supported
Smart rangefinder	850/940
IR illuminator, nm	2,2
Max IR illuminator power, w	

\*Actual uptime depends on the frequency of Wi-Fi use and the built-in VCR;

\*Product package does not include IR illuminator. Choose the 850nm/940nm IR illuminator to suit your needs.

Improvements may be made to the design and software of this product to enhance its features without prior notice to customers.

This guide can be downloaded from our official website: [www.xinfrared.com](http://www.xinfrared.com).

## **I. Contents of the package**

- TD50L digital night vision rifle scope
- Eyelets
- Portable bag IPB-3
- USB-C cable
- Power adapter
- Lens cleaning cloth
- Certificate of competence

## **II. Description:**

The Tube Series digital night vision device is a dual-use day and night scope designed for hunting in the outdoors. It features a low-light, star-level chip that can restore true colors and detail day and night. The Tube series has a range of long battery life solutions and can be widely used for hunting, observation and positioning in low visibility. It uses a standard tube diameter of 30mm to meet the requirements of a generic clamp interface.

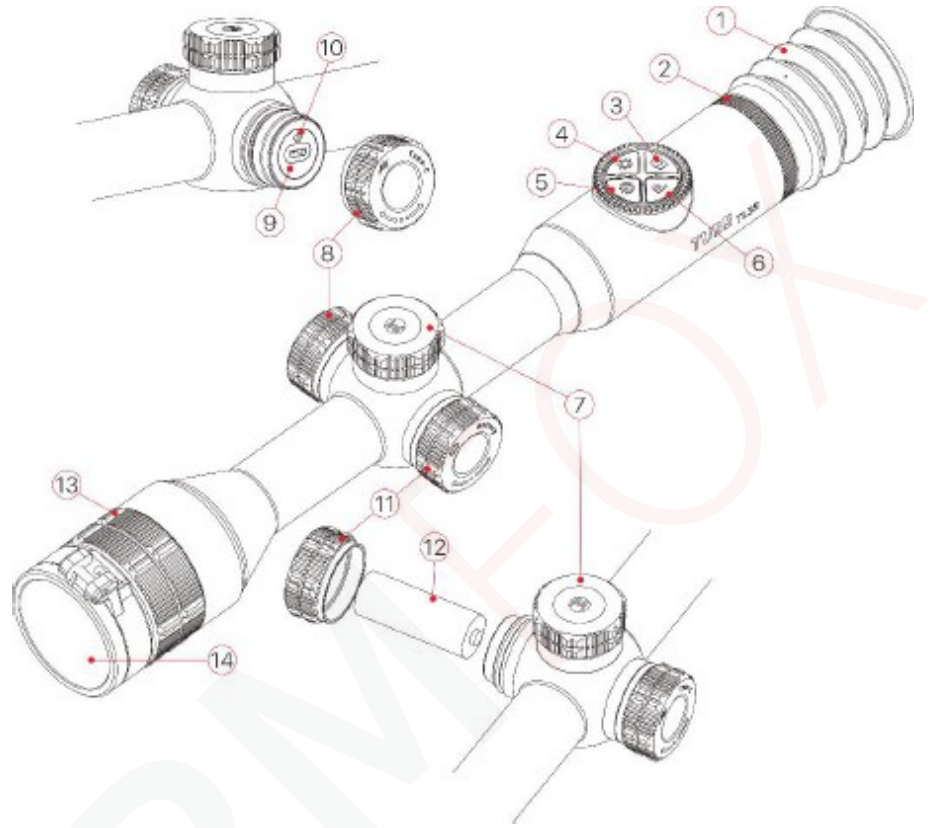
## **III. Product Features**

- Low light sensor;
- High image quality;
- Infinite zoom
- Dual power system with long battery life;
- Standard pipe diameter 30 mm;
- Stadiametric distance measurement;
- Long detection range;
- Integrated memory card, supporting photo and video recording
- Built-in Wi-Fi module supporting app connectivity
- PIP (picture-in-picture) support (for some reasons, this feature is not available in some regions);

- Convenient control interface;

## IV. Machine components

1. Eyelets
2. Eyepiece adjustment wheel
3. Camera button
4. Display brightness button
5. Power button
6. Picture mode button
7. Rotary knob
8. USB cover
9. Type C interface
10. LED indicator
11. Battery compartment cover
12. Battery 18500
13. Lens focus ring
14. Lens cover



## V. Operating the buttons

Button	Device Status/Current Operating Mode	Press	Press and hold	Rotate
Power button	Off	----	Switching on the device	----
	Home screen	Standby status	Turn off the device	----
	Standby status	Wake up the device	----	----

	Advanced menu screen	Return to the parent menu without saving changes	----	----
<b>Picture mode button</b>	Home screen	Switching the image mode:	Turn the PIP function on/off	----
<b>Brightness button displays</b>	Home screen	Brightness settings displays	Switching on/off Functions stadiametric rangefinder	----
<b>Camera button</b>	Home screen	Retrieved from	Turning recording on/off	----
<b>Rotary knob</b>	Home screen	Open a quick quote	Open advanced menu	Image magnification setting
	Quick menu screen	Setting specific function parameters	Save and go to the home screen	Toggle between menu options/move the crosshair position: Clockwise: movement left/down
	Advanced menu screen	Confirm option parameters/open submenu	Save and go to the home screen	
	Spraying screen	X-axis/Y-axis switching	Save and go to the home screen	Counterclockwise: right/upward movement

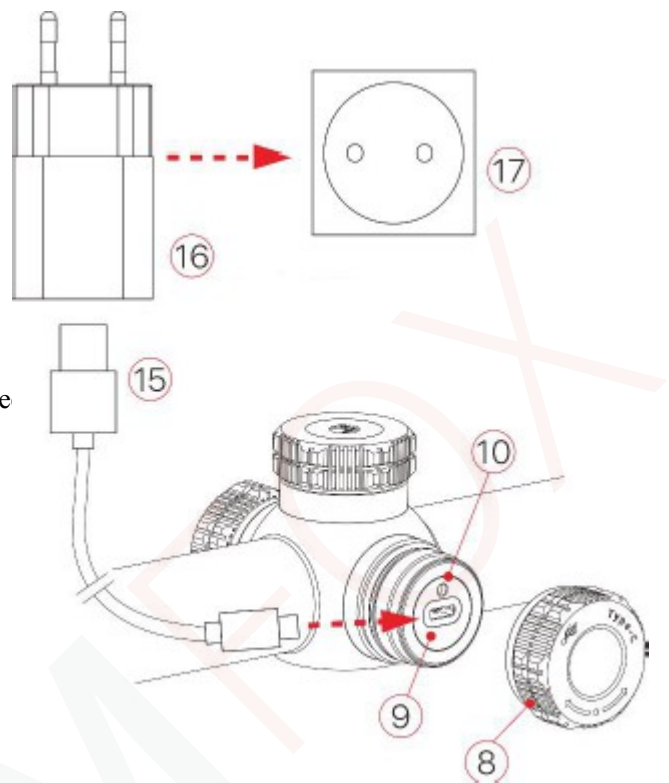
## VI. Replacing batteries

The Tube series uses a dual power system (built-in rechargeable lithium-ion battery and replaceable 18500 battery). The normal working time of the dual power system can be up to 13 hours. The battery should be fully charged before first use.

### Charging built-in battery

#### Packaging

- To open the USB cover, turn it in the opposite direction clockwise
- Insert the end of the connected Type-C data cable into the Type-C socket on the Tube;
- Connect the other end of the data cable to the power adapter and insert the adapter into a 100-240 V socket to charge the battery;

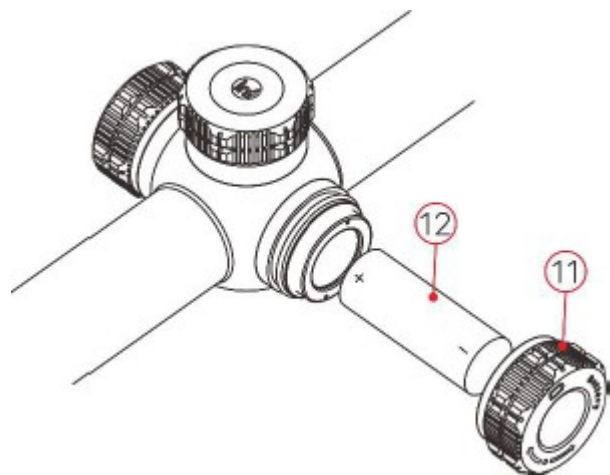


- When charging, the flash icon appears on the battery icon and the LED indicator on the device is red. When the indicator turns green, it means that charging is complete.
- If the battery icon changes to during use....., the battery level is low. Charge the battery in time to avoid shortening the life of the device due to excessive battery drainage.

**Note: The USB port can only be used to charge the built-in battery.**

### Battery installation 18500

- Turn counterclockwise to open the battery holder cover (11);
- Install the 18500 (12) battery according to the indicator plate in the battery holder, i.e. the positive pole points inwards and the negative pole outwards;



- Close the battery holder cover (11) and turn it clockwise to tighten it.

### Security measures

- When charging, use a 5V2A power adapter compatible with the device. Using a different type of adapter may cause irreversible damage to the battery or the adapter itself;
- Before a long period of storage, the battery pack should be partially charged, not fully charged or discharged.
- Do not charge the device immediately after moving it from a cold to a warm environment. Wait 30 to 40 minutes for preheating.
- Do not use the charger if it is modified or damaged.
- The device should be charged at a temperature of 0 °C to + 40 °C. Otherwise, battery life will be significantly reduced.
- Do not leave the battery unattended while charging.
- Do not charge the battery more than 24 hours after it is fully charged.
- It is not recommended to connect third-party devices that consume more power than allowed.
- The instrument is equipped with a short circuit protection system, but conditions that could lead to a short circuit should be avoided.
- The recommended operating temperature is -20 °C to +50 °C. Do not operate the device outside this temperature range, otherwise the battery life may be shortened.
- If the device is used at temperatures below freezing, the battery capacity will decrease, which is normal and does not indicate a fault. This is normal and does not constitute a fault.

### Switching between two battery types.

The Tube series supports a dual power system: a built-in lithium-ion battery and a replaceable 18500 battery, while supporting USB power.

- If both batteries are installed in the Tube device, two batteries will appear on the right side of the status bar above the picture battery icons, with the removable battery in front of the built-in battery. Green means the device is powered on, and grey means the device is not powered on.
- If the removable battery is not installed, only the green icon of the built-in battery is displayed in the status bar. batteries.
- If a replaceable battery is installed and fully charged, it will be prioritized. When the removable battery runs out, the device will automatically switch to the built-in battery.
- When the device is connected to USB, it automatically switches to external USB power. At that point, the The built-in battery icon displays a lightning-like charging icon to indicate that the built-in battery is charging.
- The replaceable battery can also be replaced when the device is in use. At this point, it automatically switches to internal battery.

## VII. External power supply

The Tube series supports external power supplies such as a portable power supply for a mobile phone (5V).

- Connect an external power supply to the USB port (9) of the Tube;
- The device will then automatically switch to an external power source and simultaneously charge the internal battery pack.

- When the external power supply is switched off, the device switches to the 18500 replaceable battery. If the 18500 replaceable battery is not installed or the battery charge level is low, it will switch to the built-in battery instead of shutting down.

## VIII. Installation and use

### Fixed installation

**WARNING!** The lens of the product must not be pointed at any sources of intense energy such as laser devices or the sun. This could damage electronic components in the device. Damage caused by failure to follow the operating instructions is not covered by the warranty.

To ensure shooting accuracy, mount the Tube in the correct position on the gun.

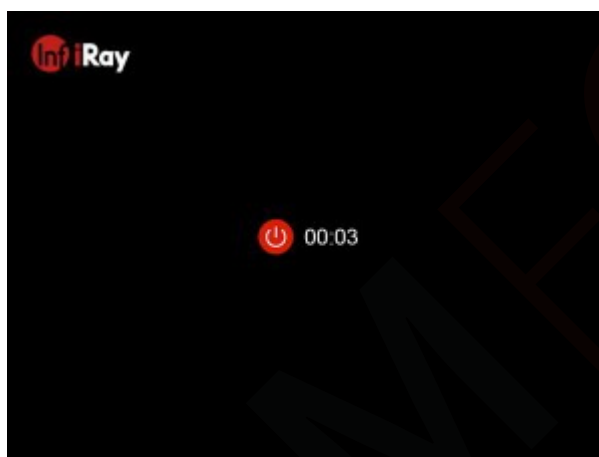
- The Tube Series should be mounted with an adapter clamp, for example, using the simple Picatinny rail clamp included in the package. The Tube Series has a 30mm tubular body design that is compatible with standard 30mm clamps such as those found on rifle scopes for daily use. Appropriate tools can be used to install the Tube device following the supplier's installation instructions and procedure.
- During installation, the position of the Tube device must be adjusted according to the distance between the eye and the eyepiece (eye relief), as stated in the specifications, and according to the sense of use and convenience. Failure to follow this recommendation may result in injury to the shooter during shooting.
- We recommend installing the rifle scope as low as possible, but keeping it well away from the barrel or other facilities;
- It is recommended to use a torque wrench to tighten the screws of the installation clamps to avoid damaging the body of the riflescope due to over-tightening, and the recommended torque must not exceed 2.5 nm;
- If the riflescope is used for hunting, first shoot according to the instructions in Chapter 9 "Shooting" this manual;
- When using the binoculars at night or in dark environments, it is recommended to use an eyepiece to avoid possible detection.

### Start-up and configuration

- Remove the lens cap (14). If the outdoor light is strong, you can close the lens cap to prevent overexposure of the image;
- Press and hold the power button (5) for 2 seconds to switch on the device. Then, after 3 s, the home screen will be displayed  
Screen.
- Rotate the eyepiece adjustment ring (2) to adjust the resolution of the icons on the display.
- Rotate the focus ring (13) of the lens to adjust the focus length;
- Switching the image mode: On the home screen, press the P button (6) to set the picture palette mode, which is in day-night order, and the icon on the top status bar is updated in real time;



- Adjusting the brightness of the display: On the home screen, press the display brightness button (4) to set the screen brightness, which can be toggled between levels 1 to 5, and meanwhile a short prompt for the appropriate brightness icon will appear at the bottom of the display;
- Adjust the sharpness of the image: Press the rotary dial (7) to go to the quick menu and adjust the sharpness image (see the "Quick menu" section for details);
- After using the device, press and hold the power button (5) for 3 seconds. Then the shutdown countdown screen will appear. When the countdown counts down from 3 to 0, the device will turn off. Do not disconnect the device from the power source while the device is shutting down and storing data. Otherwise, the data will not be saved.
- Press the power button (5) and the device enters standby mode. Press the power button (5) and the you'll wake up.



## IX. Spraying

A number of Tubes use the "freeze" method of spraying. It is recommended to shoot within the operating temperature range of the rifle scope.

- Attach the rifle scope to the weapon with the stirrup clamp;
- Select a target at a certain distance, for example 100 m, 200 m, etc.;
- Set the range according to the operating instructions described in Chapter VIII Startup and Configuration;
- Select a priming profile (see "Sight Setup - Priming Profile" in the advanced functions menu);

- Press and hold the rotary pushbutton (7) to enter the advanced menu screen, select the priming option and press the rotary pushbutton (7) to enter the priming submenu;
- Depending on the target distance selected, select or add a new shooting distance (see "Shooting-Shooting distance-Set shooting distance" in the advanced menu

- After setting the firing distance, turn the rotary pushbutton (7) to select the firing function and press the rotary pushbutton (7) go to the spraying screen (see "Shooting distance - Shooting screen" in the advanced menu). The coordinate positions of the sight (X-axis and Y-axis) are displayed in the upper left corner of the display;
- Fire on target;
- Observe the position of the actual point of impact and assume that the red x in the figure on the right  
(This mark is for illustrative purposes only. It is intended to represent a shot hole);



- If the point of incidence and the aiming point (the center point of the aiming cross) do not coincide, keep the aiming point stationary and in the meantime press and hold the P button (6) and the camera button (3) to freeze the image, whereupon a snowflake-shaped freeze icon appears on the left of the display;



- Turn the rotary control (7) to move the aiming cross, turn clockwise to move the cursor left or down, and turn counterclockwise to move the cursor right or up;
- Press the rotary pushbutton (7) to switch between the X-axis and Y-axis and the cursor position indicates the current the selected item, and the icon will turn blue;
- When the crosshairs are moved, a small white dot appears on the display to indicate the position of the crosshairs before moving;
- Press and hold the rotary encoder (7) after moving the aiming crosshairs to the actual point of impact, to save the current crosshair position and return to the main Advanced Menu screen;

- Repeat aiming and firing until the position of the hit point matches the position of the aim point.
  - **Note:** After setting the firing position, you can switch firing distance options in the quick menu.

## X. Digital zoom

The Tube Series Scope supports an infinite zoom function of 4.0-16.0, allowing you to magnify the image 1 to 4 times.

- On the home screen, rotate the rotary pushbutton (7) to zoom in/out;
- Zoom in by turning clockwise and zoom out by turning counterclockwise;
- The real-time magnification is displayed in the operation process for 2s in the lower central part of the display area and meanwhile, the current magnification is updated in real time in the top menu bar;

## XI. Photography and video recording

The Tube series comes with a built-in 16GB memory card that allows for photography and video recording. Images and video files will be named by time, so we recommend completing the system date and time settings in the advanced menu (see "Advanced Menu-Settings-Date/Time") before using the photo and video recording function.

### Retrieved from

- From the home screen, press the camera button (3) to take a photo. The image will be frozen for 0.5 seconds and the photo icon will appear in the upper right corner of the screen.
- The photos taken are saved in the built-in memory.

### Video recording

- From the home screen, press and hold the camera button (3) to start recording video;



- A recording icon and a window with the recording time in the format 00:00:00 (hours: minutes: seconds) will appear in the upper right corner of the display;
- You can also take a photo while recording by pressing the camera button (3).
- To stop recording and save the video, press and Hold down the camera button (3).
- The videos and photos you take are stored in the built-in memory.



**Remark:**

- You can still work in the menu while recording video;
- All captured images and recorded videos are stored on the built-in memory card in the format IMG\_HHMMSS\_XXX.jpg (image) and VID\_HHMMSS\_XXX.mp4 (video), where HHMMSS indicates hours/minutes/seconds and XXX indicates the sequence number of the three-digit multimedia file;
- This media file serial number cannot be reset.

**ATTENTION:**

- The maximum file duration for video recording is 10 minutes. If the video is longer than 10 minutes, it will automatically be recorded to a new file;
- The number of files is limited by the capacity of the device's built-in memory card. It is recommended to check regularly the remaining capacity of the memory card and transfer videos and pictures to other media to free up space on the memory card.
- Interface icon information is not displayed in the captured video or image.

**Memory access**


When the device is switched on and connected to the computer, it will be recognised by the computer as a memory card that can be used to access the device's memory and copy pictures and videos.

- Connect the device to your computer using a data cable;
- Starting the device;
- Double click on "my computer" on the desktop - double click to open the device named "Infray" - then click and open the device named "Internal Storage" to access the memory.
- There are various folders in memory named by time in the format xxxx (year) xx (month) xx (day).
- The folder contains images and videos taken and recorded on a given day;
- You can copy or delete the files or folders you want.

## XII. Status bar



The status bar is located at the top of the visual interface and displays information regarding the current operating status of the device. From left to right here is:

1. Current picture mode ( : day mode; : night mode)
2. Current firing profile and firing distance (e.g. A100m)
3. Current optical magnification (e.g. 4.0×)
4. Standby status and time (off by default).
5. Wi-Fi status  : Wi-Fi is deactivated; Wi-Fi is activated)
6. Clock (you can set the date and time in the settings menu or download the InfiRay Outdoor app to sync your phone's time with your device).
7. Replaceable battery power status (18500 battery)
8. Built-in battery power status

**Note:** If the icon color is green, it means the battery percentage is above 20% and the charge is sufficient. If the icon color is red, it means that the charge is insufficient and the battery needs to be recharged immediately. If the icon shows a flash icon, it means that the device is powered from an external source and the built-in battery is being charged.

### XIII. Quick offer

A quick menu allows you to quickly set the basic parameters of some common functions, including crosshair style, crosshair color, image sharpness and shooting distance. Press and hold the rotary dial (7) to save your changes and return to the home screen.

- From the home screen, press the rotary pushbutton (7) to go to the quick menu screen; rotate the rotary pushbutton (7) to go to the rotary pushbutton (7) to toggle between the following function options and the background of the selected option icon will be highlighted:

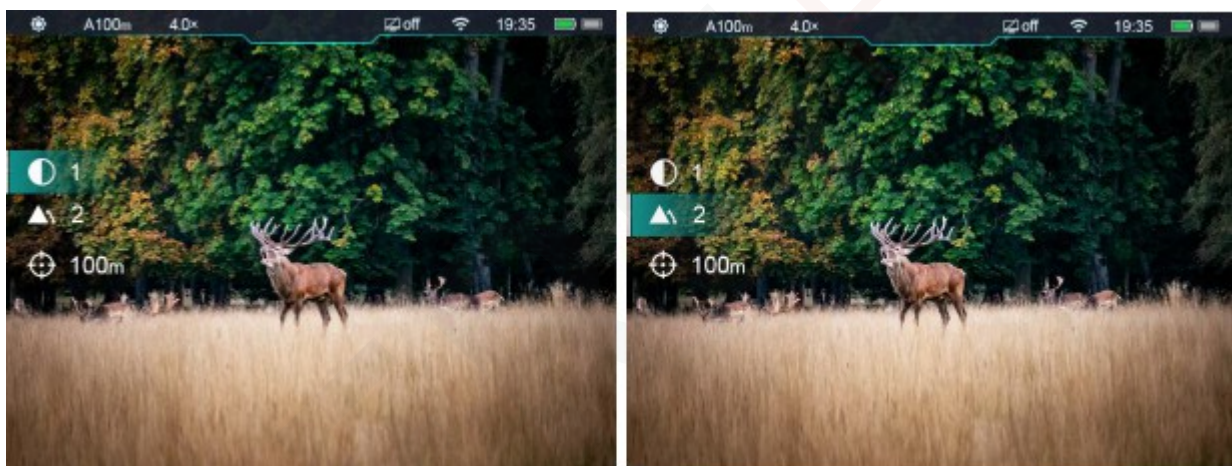
Image contrast: Turn the rotary pushbutton (7) to select and press the rotary pushbutton (7) to adjust the image contrast from level 1 to 5;

Image sharpness: Turn the rotary pushbutton (7) to select and press the rotary pushbutton (7) to adjust the image sharpness from level 1 to 5;

Shooting distance: turn the rotary pushbutton (7) to select and press the rotary pushbutton (7) to adjust the image contrast from level 1 to 5;


- Press and hold the rotary pushbutton (7) to save your changes and return to the home screen.

**Note:** If no operation is performed in the quick menu within 15 seconds, the device will automatically save the changes and return to the home screen.







## XIV. Advanced menu:

- From the home screen, press and hold the rotary pushbutton (7) for 3 seconds to go to the main menu;
- Turn the rotary dial (7) to switch between the function options in the main menu, turning clockwise to move down and counterclockwise to move up;
- The function options in the main menu are cyclical: when the cursor reaches the last option on the first page, goes to the first menu option on the second page. If the cursor is on the first option on the first page, you can turn the rotary pushbutton (7) counterclockwise to go directly to the last menu option on the second page;
- Press the rotary pushbutton (7) to adjust the parameters of the current option or to go to a submenu.
- The cursor position indicates the selected option, whose icon changes from white to blue;
- The control of secondary and tertiary offers is the same as above;
- Press and hold the rotary pushbutton (7) in any menu screen to save your changes and return to the parent menu. Press the power button (5) to return to the parent menu without saving the change;
- If no operation is performed on any menu within 15 seconds, the device automatically saves the changes and returns to home screen.
- During continuous operation of the viewfinder, when you exit the main menu, the  cursor remains in the position before exiting. When you restart the riflescope and go to the main menu for the first time, the cursor will remain at the first menu option.



## Composition and description of the main menu

<p><b>Wi-Fi</b></p> 	<p><b>Turning Wi-Fi on/off</b></p> <ul style="list-style-type: none"> <li>• Press and hold the rotary pushbutton (7) to open the extended menu;</li> <li>• Turn the rotary pushbutton (7) to select the "Wi-Fi" function;</li> <li>• Press the rotary pushbutton (7) to switch Wi-Fi on/off;</li> <li>• The icon in the status bar will change accordingly when this option is turned on or off.</li> </ul>
<p><b>Aiming cross</b></p> 	<p><b>Choice of the firing profile</b></p> <ul style="list-style-type: none"> <li>• Press and hold the rotary pushbutton (7) to open the extended menu;</li> <li>• Turn the rotary pushbutton (7) to select the "Shooting profile" function;</li> <li>• Press the rotary pushbutton (7) to open the secondary menu "Shooting profile";</li> <li>• Rotate the rotary dial (7) to select one of the three firing profiles (A, B, C);</li> <li>• Confirm your selection by briefly pressing the rotary pushbutton (7) and return to the main menu.</li> <li>• The control of the style and colour of the sight cross is the same as for priming, which can be set separately.</li> </ul>









Set the firing profile and firing distance before firing.

The Tube series supports any firing distance from 1 to 999 meters.

- Press and hold the rotary pushbutton (7) to open the extended menu;
- Turn the rotary pushbutton (7) to select the "Shooting" function;
- Press the rotary pushbutton (7) to open the secondary menu of the priming function, where the 3 priming distances are displayed;
- Turn the rotary dial (7) to select the firing distance according to the distance set for the target;
- Press the rotary pushbutton (7) to confirm the firing distance and open the firing distance submenu, which contains two options, namely "Firing" and "Firing distance";

## Spraying



### Spraying



- If the preset firing distance is the same as the distance displayed on the device, you can fire directly as described below:
- Turn the rotary control (7) to select the firing function;

- Press the rotary pushbutton (7) to go to the spraying screen;
- The coordinate positions of the sighting cross (X-axis and Y-axis) are displayed in the upper left corner of the display;
- Aim the centre of the sight cross at the centre of the target at the target distance, fire and then observe the position of the actual hit point;
- Keep the viewfinder position steady while pressing and holding the shooting mode button (6) and the camera button (3) to fix the image. Meanwhile, the freeze icon appears on the display;
- Rotate the rotary control (7) to move the aiming crosshairs until the centre of the aiming crosshairs points directly at the point of impact. See Chapter IX "Shooting" for details.



**Setting the firing distance**

- If the firing distance does not match the preset target distance, this option can be used to adjust it.
- Select an invalid shooting distance, press the rotary pushbutton (7) to open its submenu;
- Turn the rotary pushbutton (7) to select "Setting the shooting distance";
- Press the rotary pushbutton (7) to activate the range reset function and then two small triangular symbols will appear above and below the number;

- Turn the rotary pushbutton (7) to set the numeric value of the current position, which can be switched between 0 and 9;
- Press the rotary pushbutton (7) to toggle between positions in hundreds, tens and units;
- After setting, press and hold the rotary pushbutton (7) to save the settings and exit. The cursor will return to the shooting option and in the meantime the shooting distance will change accordingly;
- In addition, the status bar is synchronously updated to the new firing distance.



**Standby status**



**Setting the standby state and duration**

- In the extended menu, select "Standby" by turning the rotary pushbutton (7);
- Press the rotary dial (7) to open the standby setting submenu, which contains four options, namely 10min, 20min, 30min and off
- Turn the rotary pushbutton (7) to select;
- Press the rotary pushbutton (7) to confirm the selection and the selected option will be displayed in the upper status bar.
- If you choose Off, the standby function will be deactivated;

**Remark:**

- When the device is in the following state, the standby mode is automatically activated: up > 70° or down > 70° and left > 30° or right > 30°;

- When the device is in the shooting state, the standby mode is turned off.



This function is used to set the language, units of measure, automatically hide the status, restore factory settings and query device information.



Settings







Date

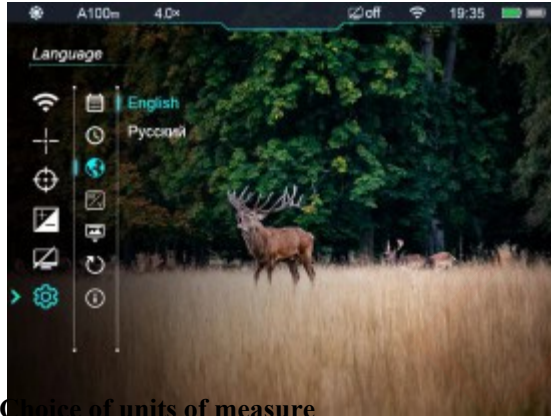


#### Setting the system date

- Press the rotary pushbutton (7) to open the secondary menu "Settings";
- Turn the rotary pushbutton (7) to select "Data";
- Press the rotary pushbutton (7) to activate the date and time reset function in YY/MM/DD format.
- Turn the rotary dial (7) to set the correct year, month and date;
- Turn the rotary pushbutton (7) to toggle between year, month and date;
- After setting, press and hold the rotary pushbutton (7) to save the changes and exit the date reset function.

		
<p><b>Time</b></p> 		<p><b>Setting the system time</b></p> <ul style="list-style-type: none"> <li>• Press the rotary pushbutton (7) to open the secondary menu "Settings";</li> <li>• Turn the rotary dial (7) to select "Time"; 24-hour display with hour and minute displayed is used.</li> <li>• Press the rotary pushbutton (7) to activate the time reset function;</li> <li>• Turn the rotary dial (7) to set the correct hour and minute;</li> <li>• Turn the rotary pushbutton (7) to toggle between the hour and minute options;</li> <li>• After setting, press and hold the rotary pushbutton (7) to save the changes and exit the time reset function.</li> <li>• After setting the time, the time in the status bar will change accordingly.</li> </ul> 
<p><b>Language</b></p> 		<p><b>Select language</b></p> <ul style="list-style-type: none"> <li>• Press the rotary pushbutton (7) to open the secondary menu "Settings";</li> </ul>

- Select "Language" and press the rotary pushbutton (7) to open the secondary menu for language selection;
- Turn the rotary pushbutton (7) to switch between English and Russian;
- Confirm and save your selection by pressing the rotary knob (7) to return to the main menu.



**Choice of units of measure**

### Units of measure



- Press the rotary pushbutton (7) to open the secondary menu "Settings";
- Select "Units" and press the rotary pushbutton (7) to open the secondary menu for setting the units;
- Turn the rotary pushbutton (7) to toggle between meter and yard;
- Confirm the selection by briefly pressing the rotary pushbutton (7), save the selection and exit.





### Automatic state hiding



#### Activate/Deactivate automatic status hiding

- Press the rotary pushbutton (7) to open the secondary menu "Settings";
- Select "Automatically hide status" and press the rotary pushbutton (7) to open the secondary menu for automatic status hiding;
- Turn the rotary pushbutton (7) to activate or deactivate;
- Press the rotary pushbutton (7) to confirm your selection and return to the main menu screen.



### Restore factory settings





#### To restore the factory default settings

- Press the rotary pushbutton (7) to open the secondary menu "Settings";
- Select "Factory settings" and press the rotary pushbutton (7) to open the secondary menu for factory settings;
- Press the rotary pushbutton (7) to select "Yes" to restore the factory settings or "No" to cancel the operation;
- Confirm the selection by briefly pressing the rotary pushbutton (7);
- If "Yes" is selected, the riflescope will automatically restart;
- If "No" is selected, the operation is cancelled and the parent menu is displayed.

Selecting Factory Reset will restore the following functions to their default settings:

- Picture mode: Color
- Shooting distance: A100

		<ul style="list-style-type: none"> <li>- Digital zoom, ×4.0</li> <li>- Standby mode: Off</li> <li>- Wi-Fi: Off</li> <li>- Language: English</li> <li>- Unit of measurement Metre</li> <li>- Automatic hiding of the Off state</li> </ul>
		
	<p><b>Information</b></p> 	<p><b>Enquire about equipment information</b></p> <ul style="list-style-type: none"> <li>• Press the rotary pushbutton (7) to open the secondary menu "General";</li> <li>• Turn the rotary pushbutton (7) to select "Info";</li> <li>• Press the rotary pushbutton (7) to display the relevant information about the current range;</li> <li>• Press and hold the rotary pushbutton (7) to save your changes and return to the parent menu.</li> </ul>

## XV. PIP

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

- Press and hold the picture mode button (6) on the home screen to enable or disable PIP.



- When the image on the home screen is enlarged by rotating the rotary pushbutton (7), the image displayed in the PIP window is also enlarged to 2x

For some reasons, this feature is not available in some regions;

## XVI. Stadiametric distance measurement;

The Tube series allows for stadiametric ranging, which allows you to calculate the approximate distance to a target of known size.

- Press and hold the display brightness button (4) on the home screen to enable or disable this feature.
- When this function is activated, the two lines used for the measurement appear in the middle of the image and the icons of the three preconfigured objects and the measured distance values are displayed on the right side.
- There are three predefined target values:
  - Deer: 1,7 m tall
  - Wild boar: 0,7 m high
  - Hare: 0.2 m tall



- Set the device so that the target is in the middle of the display area. Turn the rotary dial (7) clockwise to increase or counterclockwise to decrease the width of the measuring lines so that the target is completely between the measuring lines. When you adjust the width of the measuring line, the rangefinder data on the right will change accordingly.
- The color and center position of the measuring line are synchronized with the color and center position of the sighting cross;
- If you want to change the units of measure, go to the Advanced Menu - Units of Measurement to edit them;
- To exit this function, press and hold the display brightness button (4).

## XVII. Automatic state hiding

This feature is used to hide the GUI with only the aiming cross displayed, so there is no blocking in the image.

- In the extended menu, select "Settings" by turning the rotary pushbutton (7);
- Press the rotary pushbutton (7) to open the secondary "Settings" menu and turn the rotary pushbutton (7) to select "Auto Hide Status";
- Press the rotary pushbutton (7) to open the "Automatically hide status" submenu, then select On or Off.
- After enabling automatic status hiding, all GUI elements, including the status bar, will be automatically hidden and only the image will be displayed if no operation is performed within 8 seconds.
- Press or hold any button briefly to call up the graphical user interface information interface.
- You can operate the buttons and menu after you have viewed the GUI information.

## XVIII. Wi-Fi


The Tube product has a built-in Wi-Fi module. The device can connect to a mobile device (computer or smartphone) via Wi-Fi.

- In the advanced menu, turn on Wi-Fi. For details on operations, see "Advanced Menu - Wi-Fi."
- After turning on the Wi-Fi riflescope, look for a Wi-Fi signal on the mobile device called "Infiray\_XXXXXX", where XXXXXX is a 6-bit serial number consisting of numbers and letters.
- Select Wi-Fi, enter your password and connect. Initial The password is 12345678.
- Once connected to Wi-Fi, you can control the riflescope using the mobile app.



### To set a Wi-Fi name and password

The Tube product allows you to change the Wi-Fi name and password in the app.

- After connecting the riflescope to your mobile device, locate the "Settings"  InfiRay Outdoor interface and tap on it to open the "Settings" screen.
- Enter the new Wi-Fi name (SSID) and password in the text box.
- After sending the change, reset the device and activate the settings.

**Warning!** When you factory reset your device, the factory default Wi-Fi name and password will also be restored.

## XIX. Product updates and application description

The Tube Series thermal imager supports app control. By connecting a smartphone or laptop via Wi-Fi, you can transmit real-time images, operate the device and update the software.

This InfiRay Outdoor instruction manual can be downloaded from the official website ([www.xinfrared.com](http://www.xinfrared.com)).

You can also test and update the product firmware via the InfiRay Outdoor app or download it from our official website.

### About InfiRay Outdoor

- You can download and install the InfiRay Outdoor app on the official website ([www.xinfrared.com](http://www.xinfrared.com)) or in the app store. You can also scan the QR code below to download it for free.



- After installation, open the application.
- If your device has been connected to a mobile device, enable mobile data on it. When your device is connected to the internet, you will automatically be prompted to update. Click on the "Now" button to download the latest version immediately or click on "Later".
- The InfiRay Outdoor app automatically saves the last connected device. So as soon as you open the app InfiRay Outdoor, automatically detects the update in the background, even when the rifle scope is not connected to a phone or laptop. If an update is available and the mobile device is connected to the internet, you can download it first. Once the download is complete, the riflescope will be connected to the mobile device and the version will be automatically updated.
- After installing the update, the device reboots and starts working.

## **XX. Technical inspection**

Before using the equipment, perform a technical check to check the following items:

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

## **XXI. Product maintenance**

The equipment must be maintained at least twice a year in the following ways:

- Wipe the surface of the metal and plastic parts with a cotton cloth to remove dust and dirt. If necessary, apply silicone grease.
- Use a non-greasy organic solvent to wash the electrical contact and battery slot.
- Check the glass surface of the eyepiece and lens. If necessary, remove dust and sand from the lenses (preferably using a non-contact method). Use a professional cloth and solvent to clean the optical surfaces.

## XXII. Troubleshooting

The following table lists the problems that are likely to occur during operation of the device. Check and solve the problems according to this table. If you experience a malfunction not listed in this table, or cannot correct the malfunction, return the equipment to the dealer or supplier for troubleshooting.

Glitch	Possible causes	Solution
The rifle scope cannot be switched on	The battery's dead.	Charge the battery.
The device cannot be powered from an external power supply.	The USB cable is damaged.	Replace the USB cable.
	External power supply is insufficient.	If necessary, check the external power supply. Calibrate the images according to the instructions in Chapter 9 of the User's Guide.
Images are blurry, vertical lines appear or the background is not even.	Calibration is required.	Adjust the brightness of the display
The pictures are too dark.	The screen is not bright enough.	Adjust the focus by turning the focus wheels lenses. Wipe the optical surface with a soft cotton cloth
The icons are clear, but the images are blurry.	The lens is out of focus.	or allow the device to dry in a warm, dry environment for more than 4 hours.
	There is dust or ice on the inside of the lens or on the optical surface.	Check that the rifle scope is firmly installed. Make sure that the type of bullet and calibre you are using matches the bullets used in the shooting.
The position of the aiming crosshairs will move after the shot is fired.	The lens or mounting clip is not firmly installed.	If you shoot in summer but use the scope in winter (or vice versa), the aiming point may shift slightly.

<p>The rifle scope does not focus</p>	<p>Setting error</p> <p>The Wi-Fi password is incorrect.</p>	<p>Adjust the riflescope according to the contents of the section "Starting and adjusting the image".</p> <p>Check the outer surface of the lens and eyepiece and wipe off dust and frost if necessary.</p> <p>In cold weather, a special anti-fog coating can be used (e.g. coatings used on glasses or car mirrors).</p>
<p>The device cannot connect to a smartphone or computer.</p>	<p>There are too many Wi-Fi networks within range of the device, which can cause interference.</p>	<p>Enter the correct password</p> <p>To ensure stable access to the network, we recommend moving the device to an area with a limited number of Wi-Fi networks or an area without Wi-Fi coverage.</p>
<p>Wi-Fi signals are lost or interrupted.</p> <p>The observed target will disappear. Image quality is</p>	<p>The device is outside Wi-Fi coverage. There is an obstacle between the device and the receiver (for example, concrete walls).</p>	<p>Move your device to a location where you can receive Wi-Fi signals.</p>
<p>poor</p> <p>or the rangefinder distance shortens.</p>	<p>You're looking at the target through the glass.</p> <p>These problems are likely to occur when you use the device in an unfavourable weather (such as snow, rain and fog).</p>	<p>Observe the target directly without the presence of glass.</p>