TALION Manual

Specifications
About the device
- Description
- Package contents
- Features
- Components and controls

Power supply
- Precautions
- Recommendations for battery use
- Battery charging
- Battery installation
- External power supply

Getting Started
- Mounting on the rifle
- Powering on and Image Settings
- Button operation

Zeroing
- How to zero
- Add new distance
- Zeroing settings
- Windage/elevation
- Magnification (When zeroing)
- Freeze
- Name distance
- Change primary distance
- Delete distance

Interface
- Status bar
- Quick menu
- Main menu
  - Enter the main menu
  - Reticle & Zeroing
    - Zeroing profile
    - Reticle type
    - Reticle colour
    - Reticle brightness
  - Smoothing filter
  - Colour modes

- User settings
- Display settings
- Bluetooth
- Wi-fi settings
- Microphone
- Ballistics
- Calibration mode
- General settings
- Defective Pixel Repair
  - Defective pixel repair
  - Restore default pixel map
- Device information

Functions

- Amplification level
- Video recording and photography
- Ballistic calculator
- Discrete digital zoom
- PIP function
- Display-Off function
- Wi-fi function
- Scalable reticles
- Stadiametric rangefinder
- Wireless Remote Control
  - Description of controls
  - Remote control activation
- USB connection

Software

- Stream vision 2
- Firmware update

Maintenance

- Technical inspection
- Technical maintenance

Troubleshooting

- The device does not turn on
- Device malfunction
- The device does not operate from an external power source
- The image is fuzzy. There are distortions in the form of bars of different widths lying in different directions, or dots of different size and brightness.
- Black screen after calibration
- When the device is turned on, the calibration frequency is at first higher, then decreases (if the automatic calibration mode is enabled)
- The reticle is blurred and cannot be focused with the dioptre ring
- Coloured lines appeared on display or image has disappeared

The image is too dark
The reticle is crisp but an object at least 30 m away is blurry
The point of impact shifts after firing rounds
After zeroing, the aiming reticle moves relative to the centre of the display
The riflescope will not focus
Smartphone or tablet cannot be connected to the device
Wi-Fi signal is missing or interrupted
The image of the object being observed is missing
Poor image quality / Reduced detection distance
There are several light or black dots (pixels) on riflescope’s display or microbolometer
When the device is used in low temperature conditions the image quality is worse than in positive temperatures.
The device turns off when taking a shot
The battery compartment cover lock does not close completely
Remote control does not work
Incorrect readings of SPOA
Legal compliances and disclaimers

Specifications

Model	**XQ35 Pro**
SKU (without mount)	76566
SKU (with Weaver U mount)	76566U
SKU (with Weaver USQD mount)	76566S
SKU (with Weaver LQD mount)	76566L
Microbolometer	
Type	uncooled
Resolution, pixels	384×288
Pixel Pitch, µm	17
Sensor NETD, mK	< 25
System NETD, mK	< 15
Frame refresh rate, Hz	50
Optical Specifications	
Lens, mm	F35 F/1.0
Magnification, x	2.5-10
Eye relief, mm/inch	50/1.96
Field of view (H), °/m@100	10.7/18.7
Diopter adjustment, D	-3/+4
Detection distance (Object of “deer” type), m/y	1350 / 1476
Aiming Reticle	

Click value, mm@100 m – when magnifying, x	18 mm – 2.5x 9 mm – 5x 4.5 mm – 10x HW version PTV034.011 or higher: 12.9 mm – 2.5x 6.5 mm – 5x 3.2 mm – 10x
Click range (H/V), mm@100 m	3600/3600
Display	
Type	AMOLED
Resolution, pixels	1024x768 HW version PTV034.011 or higher: 1440x1080
Operating Features	
Power Supply, V	3–4.2
Battery type / Capacity / Rated Output Voltage	Li-Ion Battery Pack APS 5T / 4900 mAh / DC 3.7 V (removable)
External Power Supply	5 V, 9 V (USB Type-C Power Delivery)
Battery Pack operating time at temp. = 22 °C, hrs**	9
Max. recoil power on rifled weapon, Joules	6000
Max. recoil power on smoothbore weapon, caliber	12
Compatible Pulsar mounts	Weaver U Mount

	Weaver USQD Mount
	Weaver LQD Mount
Degree of protection IP code (IEC60529)	IPX7
Operating temperature, °C / °F	-25 – +50 / -13 – +122
Dimensions with an eyecup, mm/inch	330×57×67 / 12.99×2.24×2.64
Weight (with removable battery, without mount), kg/oz	0.82 / 28.92
Video Recorder	
Photo / video resolution, pixels	1024×768
Video / photo format	.mp4 / .jpg
Built-in memory	16 GB
Wi-Fi Channel* **	
Frequency	2.4/5 GHz
Standard	IEEE 802.11 b/g/n/ac

* Purchased separately.

** Actual battery life may vary depending on the use of Wi-Fi and the built-in video recorder.

*** The reception range may vary depending on various factors: obstacles, other Wi-Fi networks.

About the device

Description

Talion thermal imaging riflescopes are designed for use both at night-time and during the day. They provide exceptional image quality even in adverse weather conditions such as fog, smog and rain without being hindered by obstacles like branches, tall grass, dense foliage, or other debris.

Unlike riflescopes based on electrical-to-optical converters, thermal imaging riflescopes do not require an external light source and are resistant to high levels of illumination.

These riflescopes are designed for hunting, target shooting and recreational shooting, observation and orientation.

To get started, see the sections:

Battery Charging

Battery Installation

Mounting on the Rifle

Powering on and Image Setting

How to Zero

Stream Vision 2

Ballistic Calculator

Package contents

- Thermal imaging riflescope Talion

- Mount*
- Mounting screws*
- Removable rubber eyecup
- APS 5T Battery Pack (2 pcs.)
- APS5 battery charger
- Power adapter
- USB Type-C cable with USB Type-A adapter
- Carrying case
- Lens-cleaning cloth
- Quick User Manual
- Warranty card

*Sold separately or included in the package. The type of the mount and screws depends on the device model.

Features

- Built-in 3-axis accelerometer gyroscope (slope angle indication)
- 3 levels of sensitivity enhancement: Normal, High, Ultra
- 3 calibration modes: manual, semi-automatic and automatic
- Smooth Digital Zoom
- Multiple reticle options
- Scalable reticles (proportional to Zoom)
- 5 zeroing profiles (10 distances per profile)
- One-shot “Freeze-Zeroing” function
- Precise “Zoom zeroing” (reducing the MOA per click when zooming in)
- 9-color display palette
- Pixel repair function
- “Display-Off” function

- Display dimming function
- Auto shutdown function
- Integrated Wi-Fi for remote control and personal device connectivity
- Device firmware update using the free Stream Vision 2 App
- Recoil rated to .375H&H, 9.3×64 and 12-gauge
- Ballistic calculator
- Wireless Remote Control (purchased separately)

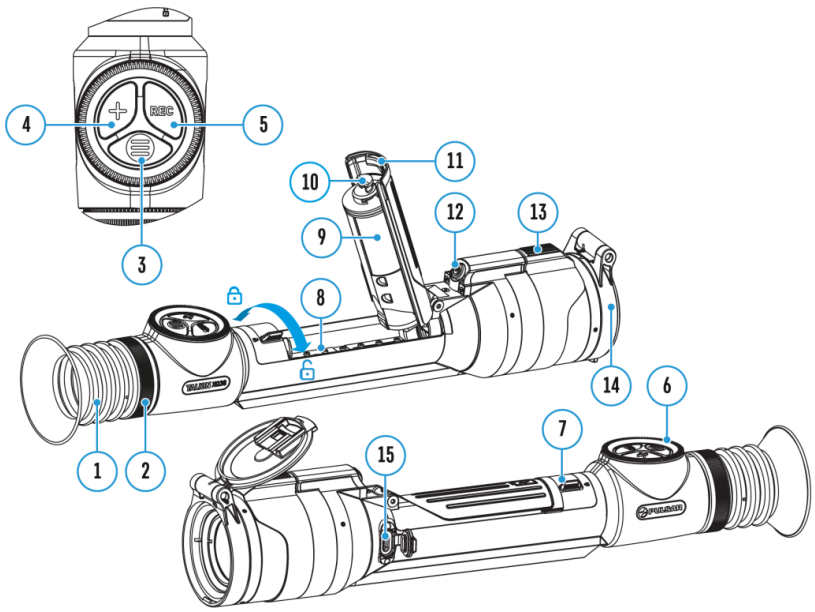
Video Recording

- Built-in photo and video recorder with audio
- 16 GB internal memory
- iOS and Android compatible
- Storing photos and videos in Cloud when using the Stream Vision 2 App
- Recoil recording
- Shadow recording

Battery Pack

- Quick-change rechargeable Li-Ion 4900 mAh Battery Pack APS 5T
- Charging via USB Type-C port

Components and controls



1. Eyecup

2. Eyepiece diopter adjustment ring
3. MENU button
4. ZOOM button
5. REC button
6. Controller
7. Battery compartment cover lock
8. Battery compartment
9. Battery APS 5T
10. Hook
11. Battery compartment cover
12. ON/OFF button
13. Lens focus control
14. Lens cap
15. USB Type-C port

Power supply

Precautions

- Always use the APS 5 charger supplied with the device (or purchased separately) to charge the APS 5T Battery Pack. The use of any other charger may irreparably damage the Battery Pack or the charger and may cause fire.
- Do not charge the Battery Pack immediately after bringing it from a cold environment to a warm one. Wait for 30-40 minutes for the Battery Pack to get warm.
- Do not leave the Battery Pack unattended while charging.
- Never use a modified or damaged charger.
- Do not leave the Battery Pack with a charger connected to the power adapter after charging is complete.
- Do not expose the Battery Pack to high temperatures or an open flame.
- Do not submerge the Battery Pack in water.
- Do not connect an external device with a current consumption that exceeds permitted levels.
- Do not dismantle or deform the Battery Pack.
- Do not drop or hit the Battery Pack.
- Keep the Battery Pack out of the reach of children.

Recommendations for battery use

- The battery should be partially charged for long-term storage – 50 to 80 %.

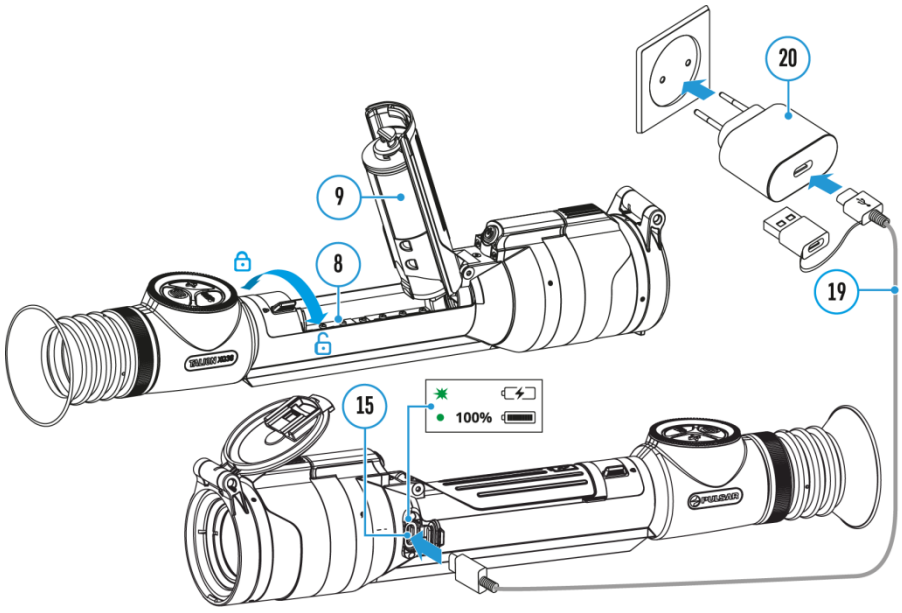
- Charge the Battery Pack at a temperature from 0° C to +45° C (32° F to +113° F), otherwise the battery life will decrease significantly.
- When using the Battery Pack at sub-zero (sub 32° F) temperatures the battery capacity decreases. This is normal and is not a defect.
- Do not use the Battery Pack at temperatures above those shown in the table – this may decrease battery life.
- The Battery Pack is short circuit protected; however, any situation that may cause short-circuiting should be avoided.

Battery charging

Talion thermal imaging riflescopes come with a rechargeable lithium-ion Battery Pack APS 5T. The battery should be charged before first use.

The icon  in the status bar will flash when the battery is low. The battery needs to be charged.

Option 1



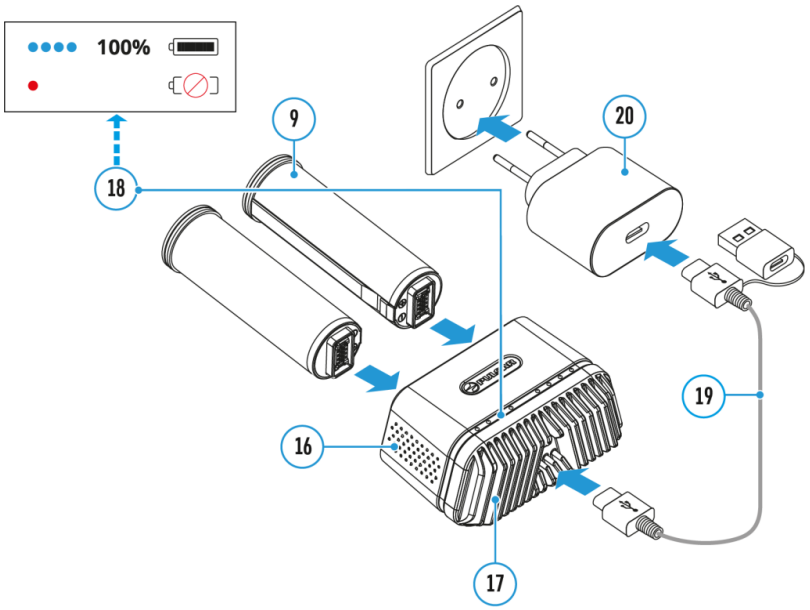
1. **Install** the APS 5T battery **(9)** in the battery compartment **(8)** of the device.
2. Connect the USB Type-C cable **(19)** to the USB Type-C connector **(15)** of the device.
3. Connect the other end of the USB Type-C cable **(19)** to the Power Adapter **(20)** by removing the USB Type-A adapter.

4. Plug the Power Adapter **(19)** into a 100-240 V socket.
5. Wait until the battery is fully charged (indication in the status bar: 100).

If the device is off, the LED indicator will display the battery charge status:

LED indication	Battery charge status
✸	Battery is charging
●	Battery is fully charged

Option 2



1. Insert the APS 5T battery **(9)** along the guide into the APS 5 charger* **(16)** slot as far as it will go. The APS 5 charger is supplied with your device or purchased separately.
2. Connect the other end of the USB Type-C cable **(19)** to the Power Adapter **(20)** by removing the USB Type-A adapter.
3. Plug the Power Adapter **(20)** into a 100-240 V socket.
4. Connect the other end of the USB Type-C cable **(19)** to the USB Type-C connector **(17)** of the charger.
5. LED indicators **(18)** will display the battery charge level (see Table).
6. Wait until the battery is fully charged (LED indication **(18)**: ● ● ● ●).

Note: Two batteries can be charged at the same time, a second slot is provided for it.

LED indication (18) in the battery charging mode	Battery Level
	Battery charge level is from 0% to 25%
	Battery charge level is from 26% to 50%
	Battery charge level is from 51% to 80%
	Battery charge level is from 81% to 99%
	Battery is fully charged. Charging will automatically stop. The battery can be disconnected from the charger.
	Defective battery. **Do not use the battery!**

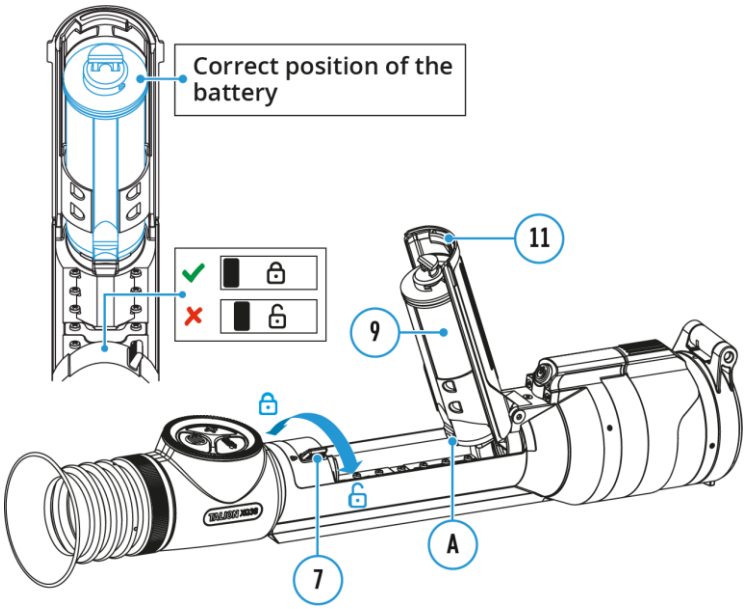
LED indication (18) in the standby mode*	Battery Level
	Battery charge level is from 0% to 25%
	Battery charge level is from 26% to 50%
	Battery charge level is from 51% to 80%
	Battery charge level is from 81% to 99%
	Battery is fully charged. It can be disconnected from the charger.
	Defective battery. **Do not use the battery!**

* Standby mode is when the batteries are in the charger but the Power Adapter is not connected. In this mode, the indicators are only on for 10 seconds.

Attention! When using a Power Adapter that does not support USB Power Delivery fast charging technology, the flicker frequency of the LED indicators decreases by a factor of 3 and the charge time increases.

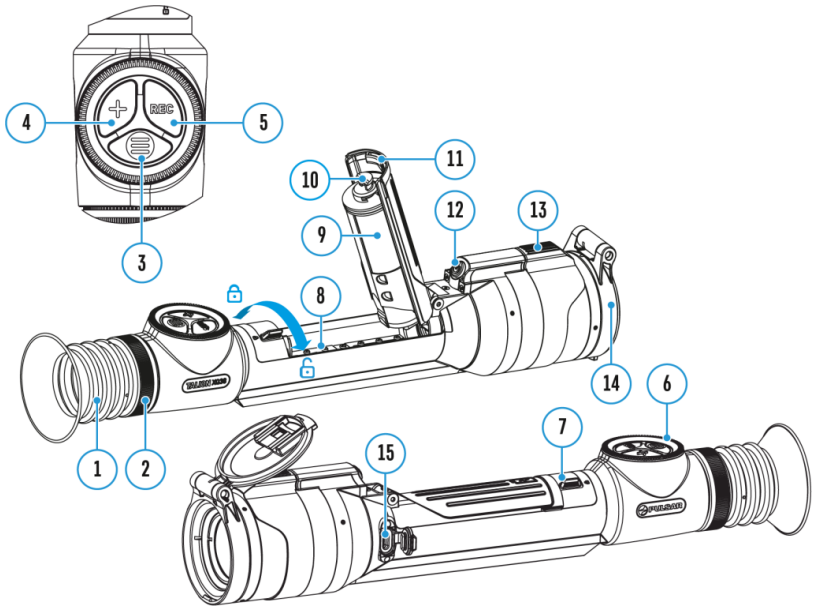
Attention! The charger heats up during fast charging. Excess heat is removed through the radiator and does not affect the device operation.

Battery installation



1. Set the battery compartment lock **(7)** to the far right position 🔓 .
2. Open the battery compartment cover **(11)**.
3. Insert the APS 5T battery **(9)** under the battery compartment cover **(11)** as shown in the image. The protrusion **(A)** on the battery should fit into the groove between the fasteners under the battery compartment cover **(11)**.
4. Close the battery compartment cover **(11)**. The hook **(10)** must fit into the groove of the battery compartment cover lock **(7)**. Then move the lock **(7)** to the left as far as it will go into the fixed position until it clicks. The lug on the lock **(7)** must line up with the icon 🔒 .

External power supply



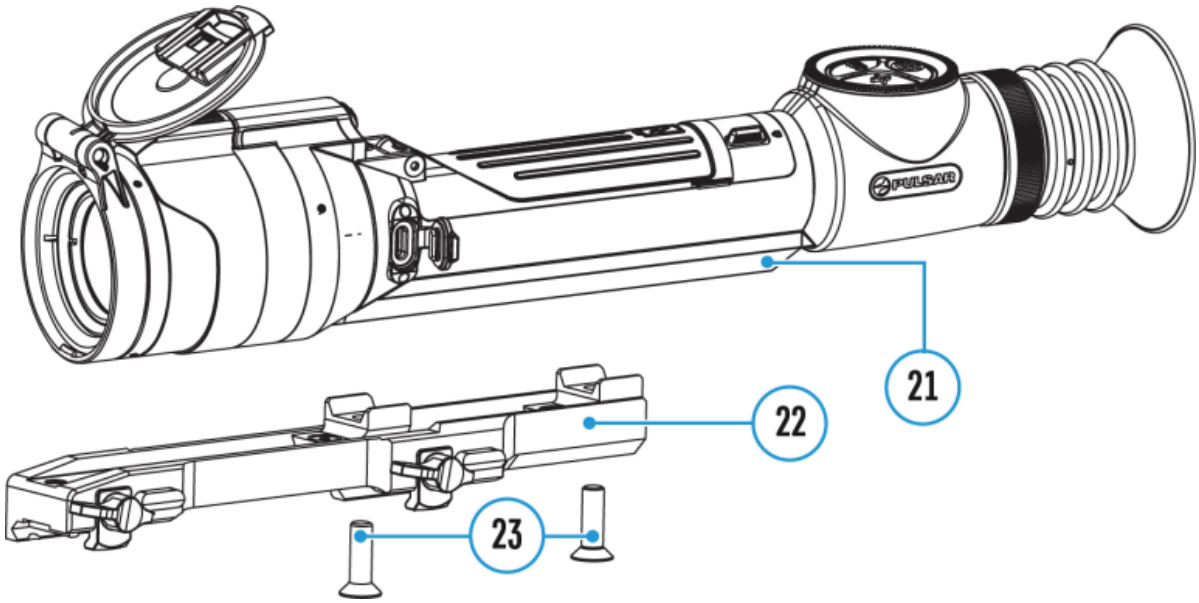
Power can be supplied from an external source such as a 5V or 9V power bank

1. Connect the external power supply to the micro USB Type-C port **(15)** of the riflescope.
2. The riflescope switches to external power source, while the APS 5T Battery Pack will gradually recharge.
3. A rechargeable battery icon 100 indicating a percentage of the battery life will appear in the status bar.
4. If the riflescope operates on external power supply but the Battery Pack APS 5T is not installed, an icon 100 is shown.
5. When external power supply is disconnected, the riflescope switches to the APS 5T battery pack without powering off.

Warning! Charging APS 5T batteries at air temperatures below 0° C (32° F) may reduce battery life. When using external power, connect the Power Bank to the device after it has been turned on and working for several minutes.

Getting Started

Mounting on the rifle



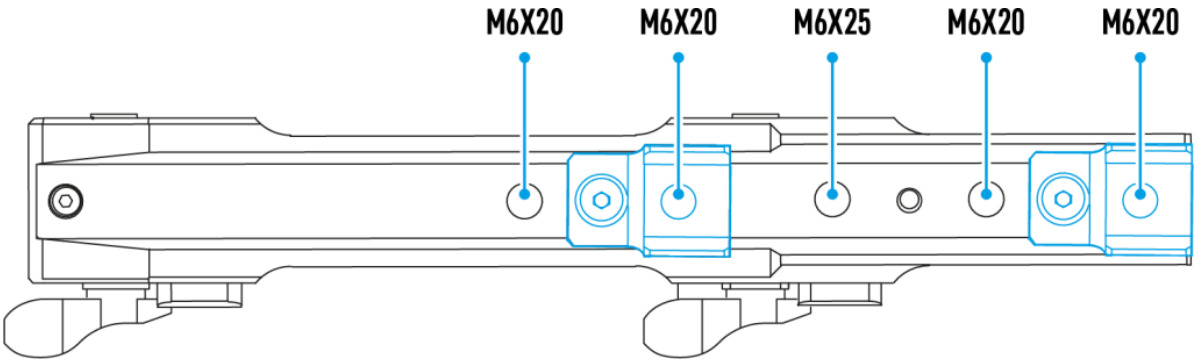
To ensure accurate shooting the Talion riflescope should be properly mounted on the rifle.

1. Secure the support* **(22)** on the riflescope mount **(21)** using a Allen wrench/hex key* and screws **(23)*** (clamping force – 4 Nm/35.4 in-lbs).
2. Choosing the position of the mount helps to ensure the correct eye relief, depending on the type of rifle.
3. Install the riflescope with the mount on the rifle and check if the position is suitable for you, then remove it.
4. Unscrew the screws **(23)** halfway, apply some thread sealant onto the thread of the screws **(23)** and tighten them fully (clamping force – 4 Nm/35.4 in-lbs). Let the sealant dry for the time specified in the instructions. The riflescope is ready to be installed on a rifle and to be zeroed. Recommended torque force for the side screws of the Weaver mount is 2 Nm to 3 Nm (17.7 in-lbs to 26.6 in-lbs).

5. Before using the riflescope (especially for hunting), follow instructions in the **Zeroing** section.

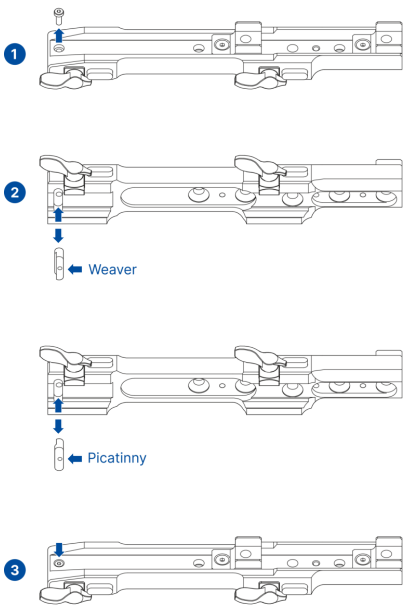
*Sold separately or included in the package. The type of the mount and screws depends on the device model.

Mount	Screws
Weaver U	2 screws M6x18
Weaver LQD	3 screws M6X12
Weaver USQD	2 screws M6×20 or 1 screw M6×20 + 1 screw M6×25 (for the mount center bore)

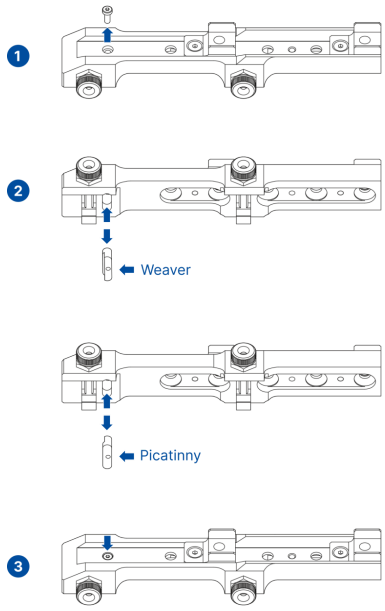


Adjustment for Weaver/Picatinny rail

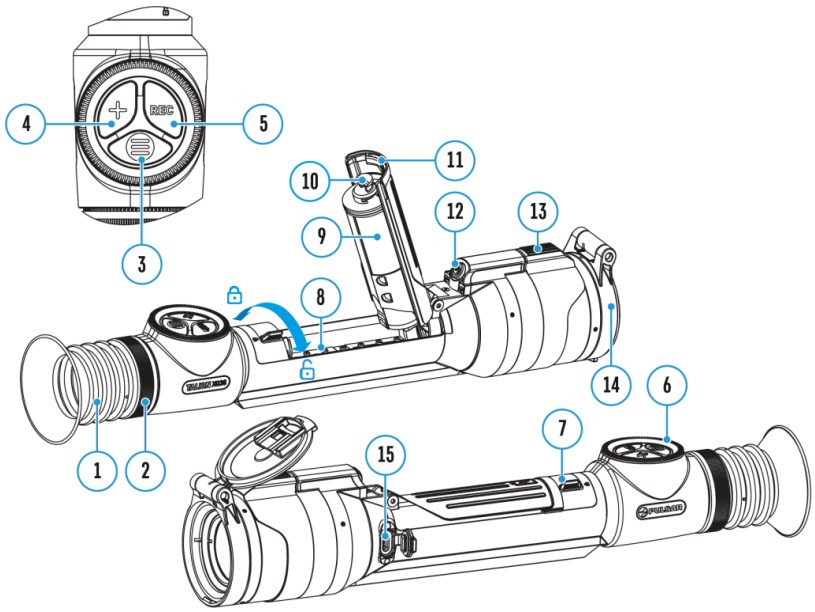
Weaver USQD



Weaver U



Powering on and Image Settings



1. Remove the lens cover **(14)**.
2. Turn the unit on with a short press of the **ON/OFF (12)** button.
3. Adjust the sharpness of the symbols on the display by rotating the dioptre adjustment ring of the eyepiece **(2)**.
4. Rotate the lens focus control **(13)** to focus on visual target.
5. Enter the main menu with a long press of the **MENU (3)** button and select the desired **calibration mode** by rotating the controller: manual **(M)**, semi-

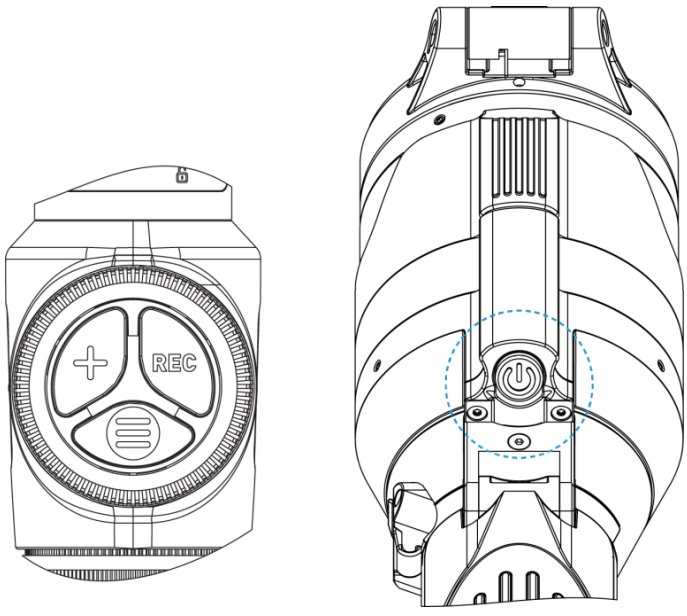
automatic **(SA)** or automatic **(A)**.

6. Calibrate the image with a short press of the **ON/OFF (12)** button (when calibration mode **SA** or **M** has been selected). Close the lens cap before manual calibration.
7. Activate the quick menu by briefly pressing the **MENU (3)** button to select the **amplification level** (**"Normal"** N, **"High"** H, **"Ultra"** U), adjust the brightness and contrast (see the **Quick Menu** section).
8. Repeatedly press the **ZOOM (4)** button successively to change the magnification ratio of the riflescope. Rotate the controller **(6)** for smooth digital zooming from the current magnification.
9. Power the device off with a long press of the **ON/OFF (12)** button.

Observation conditions: time of day, weather, different observation objects affect the image quality. Custom settings for brightness, display contrast as well as the function of adjusting the microbolometer sensitivity level will help to achieve the desired quality in a particular situation.

Warning! Never point the lens at intensive energy sources such as laser radiation emitting devices or the sun. It can damage electronic components in the device. The warranty does not cover damage arising from failure to comply with operating instructions.

Button operation



Operation	Button

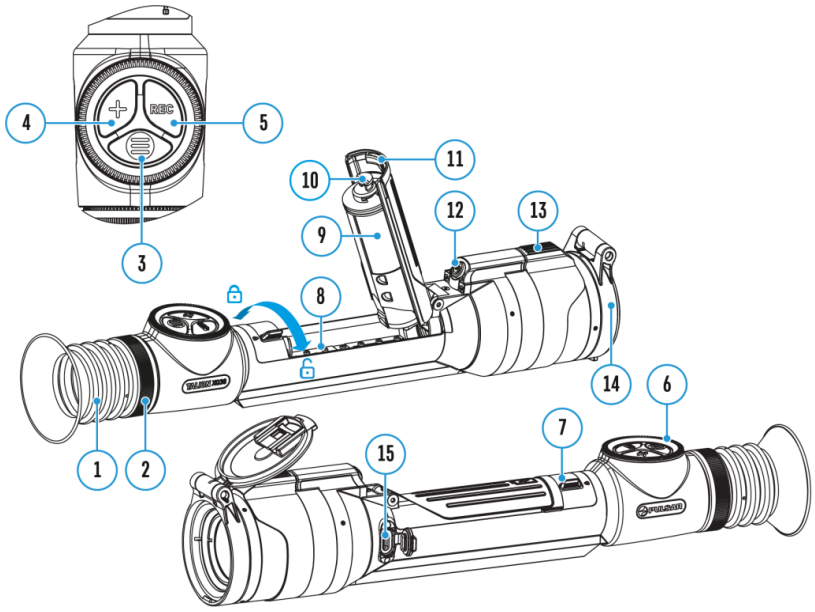
Power device on	short press
Power device off	long press for 3 secs
Turn display off	long press for less than 3 secs
Turn display on	short press
Calibrate the microbolometer	short press
Disable SPOA of **ballistic calculator**	double press
Control discrete digital zoom	short press
Smooth Zooming	rotation
PiP on/off	long press
Video Recorder	**Button**
Start/pause/resume video recording	REC short press
Stop video recording	REC long press
Switch to video / photo mode	REC long press
Capture Photo	REC short press
Main Menu	**Button**
Enter main menu	long press
Navigation through menu	rotation
Enter menu items	short press
Confirm value	short press
Exit menu items	long press
Exit main menu	long press
Quick Menu	**Button**
Enter quick menu	short press
Switch between quick menu options	short press
Parameter change	rotation

Exit quick menu

 long press

Zeroing

How to zero



Zeroing at a temperature close to the riflescope's operating temperature is recommended.

Step 1. Take a shot



1. Shooting from a benchrest is recommended.

2. Set a target at a known distance.

3. Adjust the riflescope according to the **Powering on and Image Setting** section.

4. Select the zeroing profile (see **Reticle & Zeroing** → Zeroing Profile main menu item)

5. Point the rifle at the center of the target and shoot.

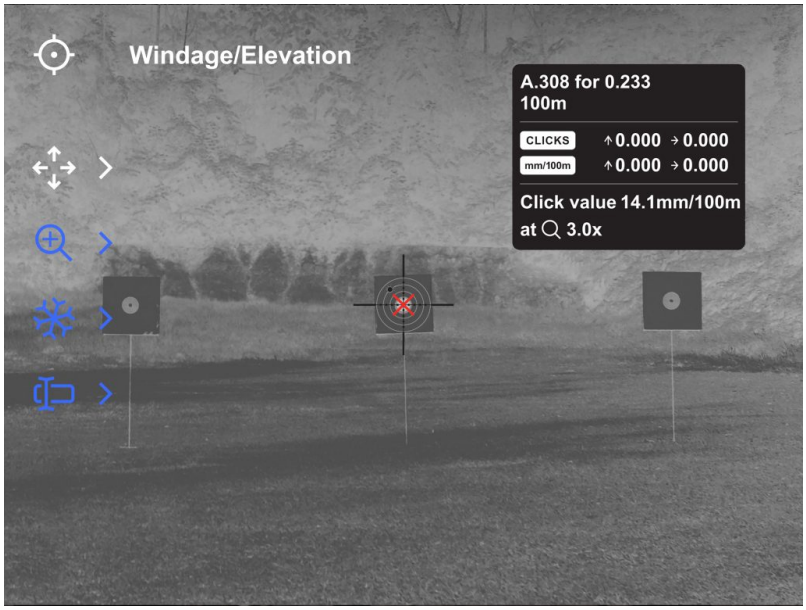
Step 2. Align the reticle with the point of impact

1. Press and hold the **MENU (3)** button to enter the main menu.

2. Add the distance you are aiming at (e.g. 100 meters): **Reticle & Zeroing** → **Add New Distance** . Select the value for each distance digit by rotating the controller **(6)**. Press the **MENU (3)** button briefly to switch between digits. After setting the required distance, press and hold the **MENU (3)** button to save it.



3. After adding the distance, it will switch to the **Zeroing** menu . An auxiliary cross will appear in the center of the display, and X and Y coordinates of the auxiliary cross will appear in the upper right corner.



4. Press the **MENU (3)** button briefly to enter the **Windage/Elevation** submenu.

5. While holding the reticle at the aiming point, move the auxiliary cross until it is aligned with the impact point by rotating the controller **(6)**.



6. To change the direction of the auxiliary cross movement from horizontal to vertical, press the **MENU (3)** button briefly.

Zoom Zeroing function:

To improve the accuracy of zeroing, you can change the magnification in the menu . The larger the magnification, the smaller the step of shifting the reticle on the display relative to the image from the sensor.

		HW version PTV034.011 or higher:
Click value, mm@100 m – when magnifying, x	17 mm – 2.5x	12.9 mm – 2.5x
	8.5 mm – 5x	6.5 mm – 5x
	4.25 mm – 10x	3.2 mm – 10x

One-shot "Freeze Zeroing" function:

Using the **Freeze** function allows you to make adjustments without the need to hold the rifle precisely at the initial aiming point – freezing the zeroing screen (refer to **Reticle & Zeroing** menu item ⇒ **Distance** submenu ⇒ **Zeroing** submenu ⇒ **Freeze** submenu or short pressing of the **ON/OFF (12)** button. The image will "freeze" and the icon will appear.

Step 3. Save the coordinates

1. Press and hold the **MENU (3)** button to save a new position for the reticle. The reticle will be aligned with the impact point and it will exit the **Windage/Elevation**

submenu.



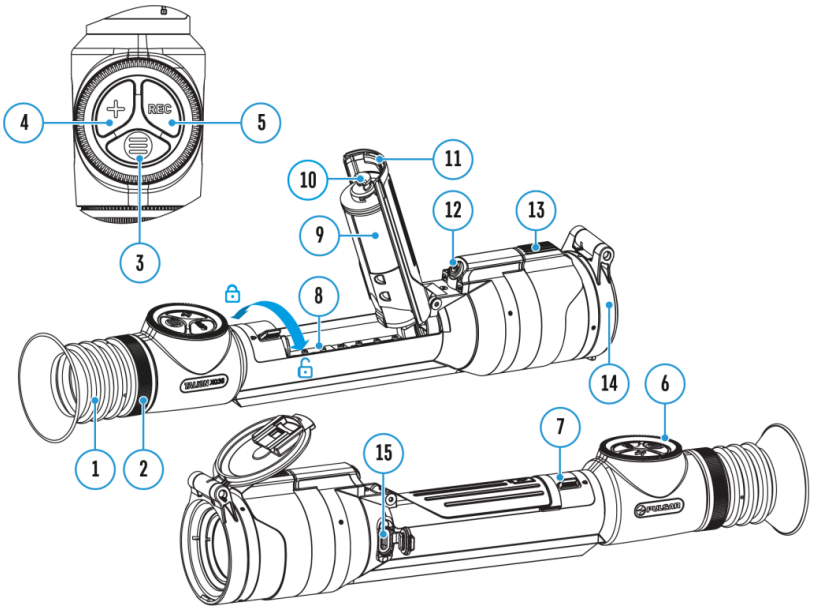
2. Press and hold the **MENU (3)** button again to exit the zeroing settings menu – the message “Zeroing coordinates saved” appears, confirming the successful operation.

3. Fire a second shot – now the point of impact and the aiming point must be matched.

Notes:

- After zeroing, the reticle may not be in the center of the display.
- The range of movement of the riflescope reticle allows you to successfully zero the riflescope, even on mounts that are far from ideal, minimizing the possible disadvantages of the mounts. The better the mount is installed, the less you have to move the reticle. We recommend mounting the riflescope as low as possible.

Add new distance



To zero your riflescope, you need to set a zeroing distance first in the range of 1 to 910 m (955 yards).

1. Press and hold the **MENU (3)** button to enter the main menu.

2. Rotate the controller **(6)** to select the **Reticle & Zeroing** menu item.

3. Press the **MENU (3)** button briefly to enter the Reticle & Zeroing submenu.

4. Rotate the controller **(6)** to select **Add New Distance** menu item.



5. Press the **MENU (3)** button briefly to enter the submenu.

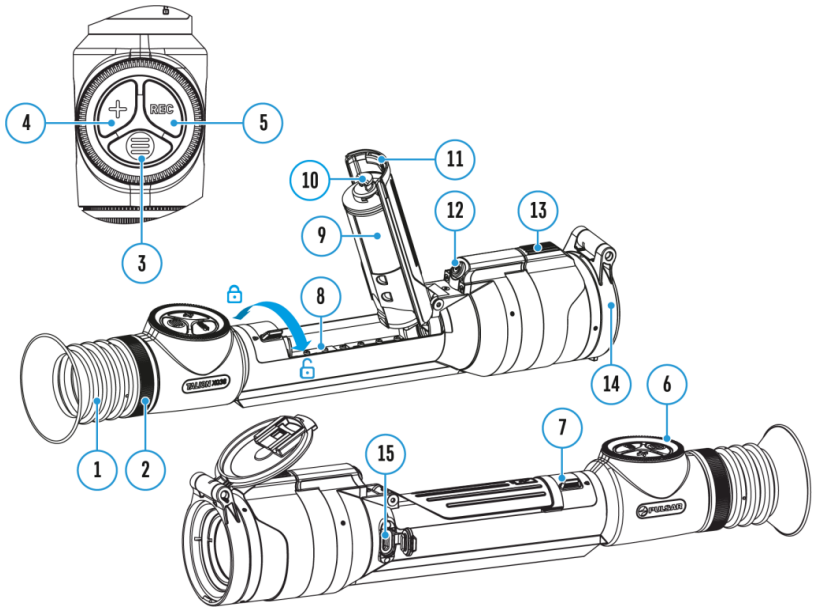
6. Rotate the controller **(6)** to select a value for each digit. Press the **MENU (3)** button briefly to switch between digits 100 m.

7. Having set the desired distance, press and hold the **MENU (3)** button to save it.

The distance you set first becomes a **primary distance –** shown with the 0 icon on the right of the distance value.

Note: Maximum number of zeroing distances is 10 for each profile.

Zeroing settings



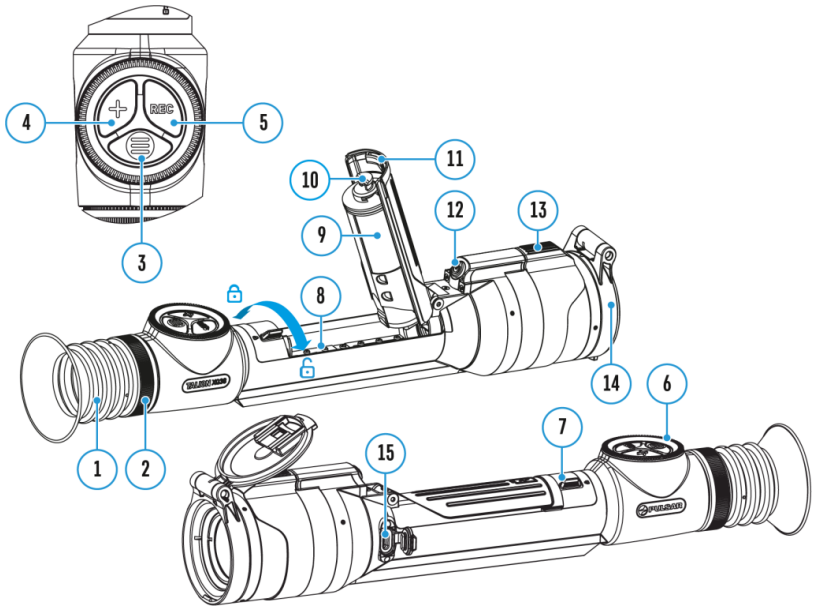
1. Press and hold the **MENU (3)** button to enter the main menu.
2. Rotate the controller **(6)** to select **Reticle & Zeroing** in the menu. Briefly press **MENU (3)** to select it. Zeroed distances are displayed below.
3. The values (e.g., +7.0) shown on the right of the distance values, stand for the number of clicks along the Y axis, at which the reticle position at other distances differs from the reticle position in the primary distance.
4. To zero at any distance again, rotate the controller **(6)** to select the required distance and briefly press the **MENU (3)** button.
5. Rotate the controller **(6)** to select the **Zeroing** and enter by briefly pressing the **MENU (3)** button.
6. **Zeroing** screen, which allows the change of zeroing coordinates, will appear:



Windage/elevation

Adjust the reticle position through the **Windage/Elevation** submenu in Zeroing . For more information, see the **How to Zero** section.

Magnification (When zeroing)

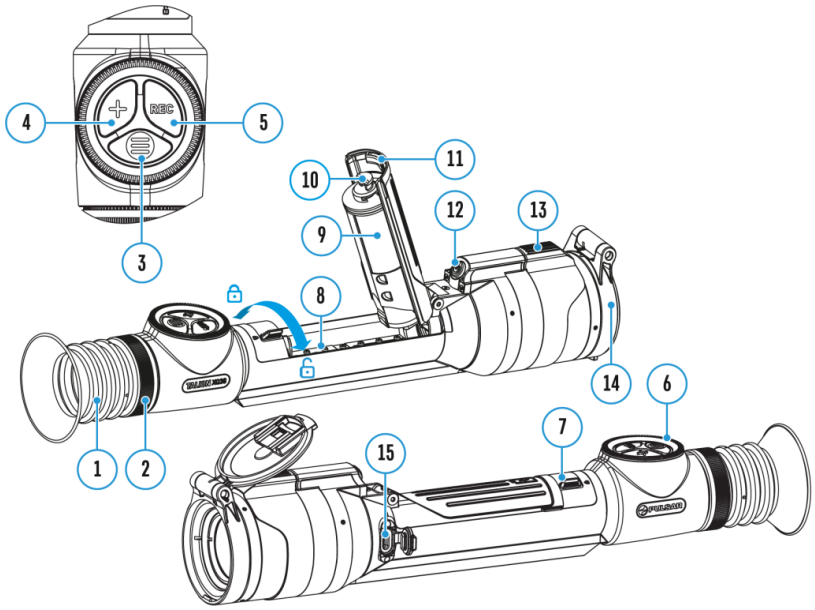


Magnification allows you to magnify via the device's digital zoom when zeroing, which reduces the MOA-per-click values of adjustments and improves zeroing accuracy.

1. In the **Zeroing** menu, rotate the controller **(6)** to select the **Magnification** submenu item and enter by briefly pressing the **MENU (3)** button.
2. Rotate the controller **(6)** to select a digital magnification value of the riflescope (e.g., x4).
3. Press the **MENU (3)** button briefly to confirm your selection.

The minute of angle click when using the Magnification function is indicated in the Table of **Technical Specifications**.

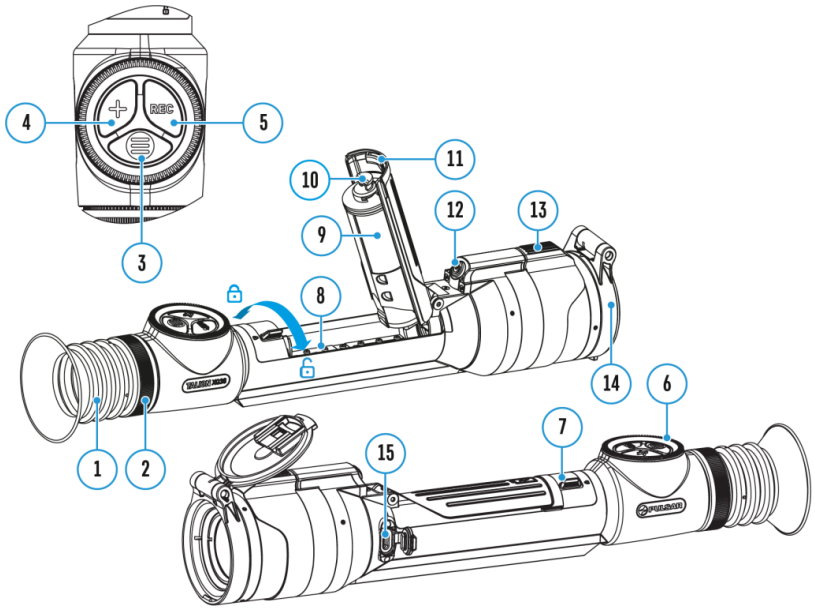
Freeze



The “freeze” function allows the user to adjust the riflescope’s reticle on a still image while manipulating the rifle.

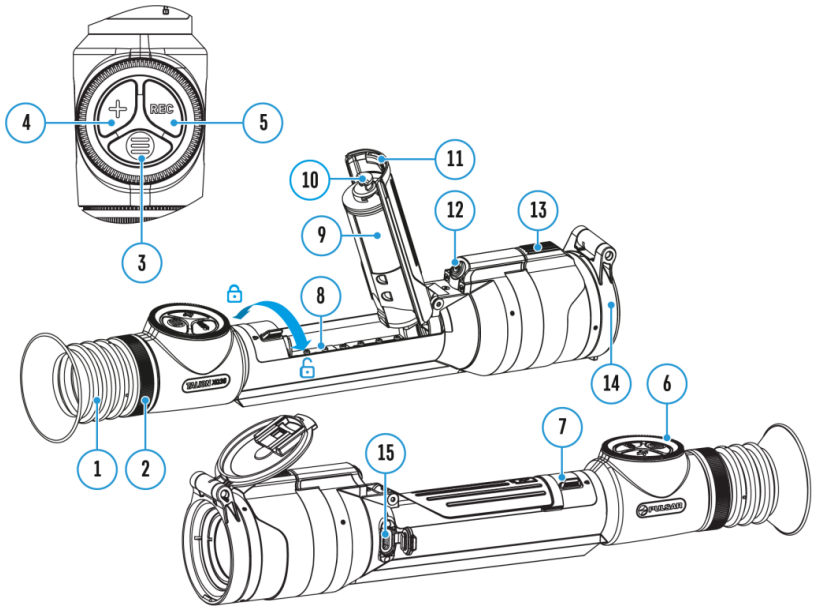
1. In the Zeroing menu, rotate the controller **(6)** to move the cursor to the **Freeze** function.
2. Align the reticle with the point of aiming and press the **MENU (3)** button or the **ON/OFF (12)** button. A screenshot will be taken, an icon will appear.
3. Go to the additional **Windage/Elevation** submenu and adjust the position of the reticle (see the How to Zero section).
4. Select the **Freeze** submenu item again and briefly press the **MENU (3)** button or **ON/OFF (12)** button – the image will “unfreeze”.

Name distance



1. In the Zeroing menu, rotate the controller **(6)** to select the **Name Distance** submenu item and enter it by briefly pressing the **MENU (3)** button.
2. Rotate the controller **(6)** to select a value for each digit. Press the **MENU (3)** button briefly to switch between digits.
3. Press and hold the **MENU (3)** button to confirm the selection.

Change primary distance

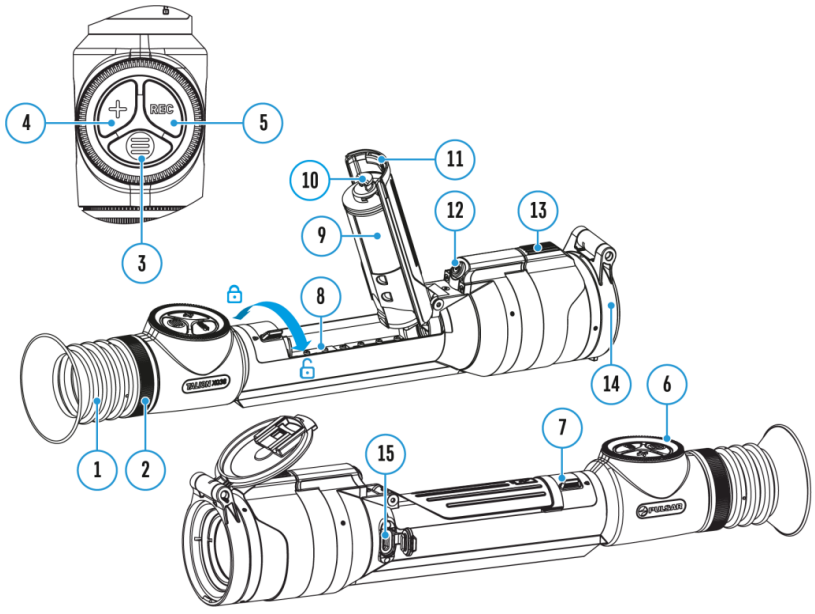


1. Press and hold the **MENU (3)** button to enter the main menu.

2. Rotate the controller **(6)** to select the **Reticle & Zeroing** menu item and enter by briefly pressing the **MENU (3)** button – zeroed distances are displayed at the bottom.
3. Select a non-primary distance and enter the submenu for operating the distance with a brief press of the **MENU (3)** button.
4. Select **Change Primary Distance** item.
5. Press the **MENU (3)** button briefly.
6. Icon next to the selected distance confirms the change of primary distance.

There will also be a recalculation of corrections in clicks for other distances relative to the new primary distance.

Delete distance



1. Press and hold the **MENU (3)** button to enter the main menu.
2. Rotate the controller **(6)** to select the **Reticle & Zeroing** menu item and enter by briefly pressing the **MENU (3)** button – zeroed distances are displayed at the bottom.
3. Select the distance you wish to delete and enter the submenu for operating the distances with a brief press of the **MENU (3)** button.

4. Select **Delete Distance** item.
5. Press the **MENU (3)** button briefly.
6. Select *"Yes"* in the appeared dialog box to delete a distance. *"No"* – to cancel deletion.
7. Press the controller button **(6)** briefly to confirm your selection.

Attention! If the primary distance is deleted, the first distance on the list automatically becomes the new primary distance.

Interface

Status bar



The status bar at the bottom of the display shows current operating statuses via icons, including:

1. Actual zeroing profile (e.g., A)

2. Zeroing distance (e.g., 100 m)

3. Amplification level (e.g., Normal)

4. Smoothing Filter (displayed when the function is on)

5. Calibration mode (a countdown timer :05 will appear instead of the calibration icon when in automatic calibration mode with 5 seconds remaining until automatic calibration)

6. Microphone

7. Current magnification

8. Wi-Fi connection

9. Bluetooth:

– Bluetooth is on

– the device with Bluetooth is connected

10. Auto Shutdown function (e.g., 5 min.)

12. Clock

13. Power Indication:



– charge level if the device is powered by a battery



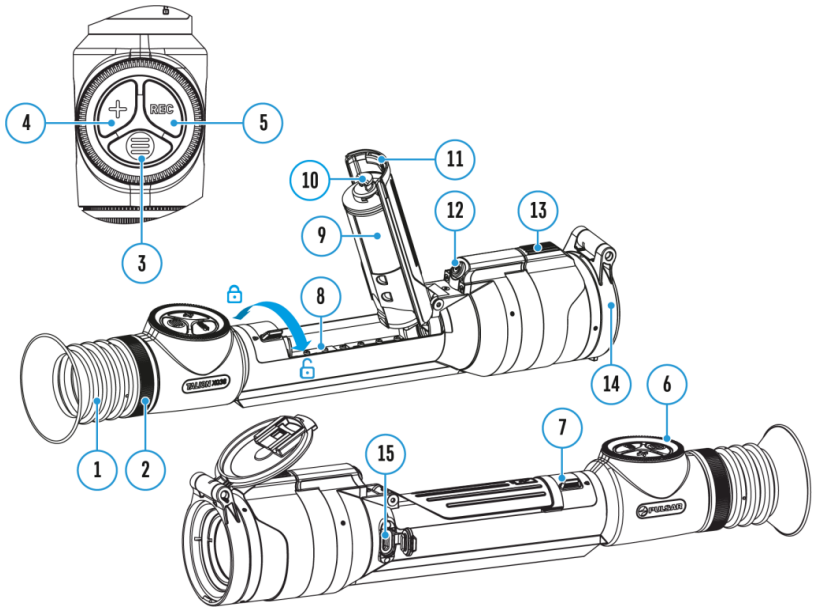
– charge level if the device is charging and powered by a battery



– no battery, the device is connected to an external power supply


– low battery charge

Quick menu



The quick menu allows you to control the main settings of the riflescope (brightness, contrast), use a stadiometric rangefinder, amplification modes, select the ballistic calculator distance, and change the zeroing distance (if there are several) to another one in the current profile.

- Press the **MENU (3)** button briefly to enter the quick menu.
- A short press of the **MENU (3)** button enables you to switch between functions, as described below.



Brightness – rotate the controller **(6)** to change the display brightness value from 00 to 20.

Contrast – rotate the controller **(6)** to change the image contrast value from 00 to 20.

Amplification Levels – allows you to select one of three **amplifying levels of sensitivity** (Normal N, High H, Ultra U).

Note: To maintain brightness and contrast settings when changing amplifying levels, activate **Save image settings after shutdown** switch in **User settings** .

100m – information on the current profile and zeroing distance in this profile (e.g., profile A, zeroing distance of 100 m). This information is always displayed in the status bar. Rotate the controller **(6)** to switch between the zeroing distances in the selected profile. This function is available if there are two or more distances in the profile.

> *Tip:* To quickly switch between distances while hunting, leave the Zeroing Distance option selected before exiting the quick menu. The menu item will be saved, and the next time you enter the quick menu, you can quickly switch the zeroing distances by turning the controller **(6)** (for example, 100 m, 150 m, 200 m).

– change the distance to calculate corrections for the **ballistic calculator**. Rotate the controller **(6)** to select the distance.

This function is only visible when the ballistic profile is selected.

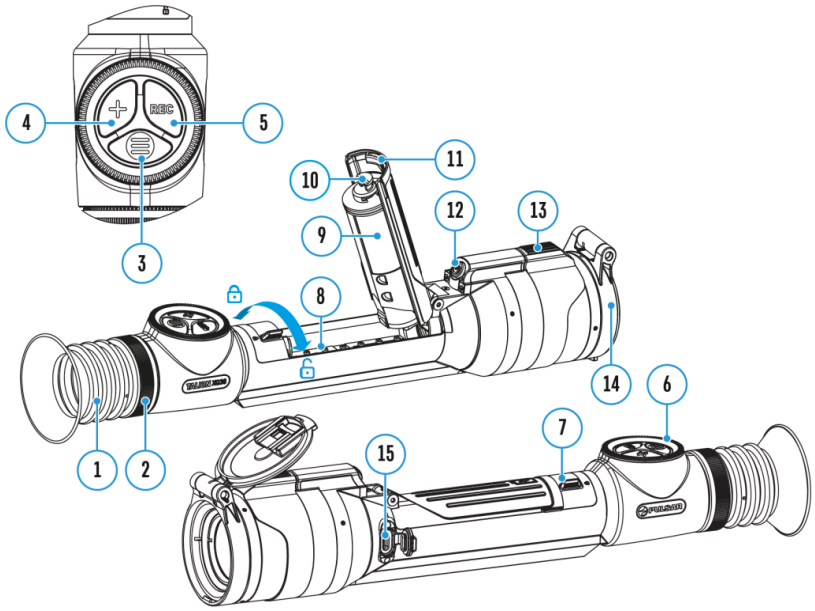
Note, that ballistic calculator uses angle/elevation readings of your riflescope in order to calculate the SPOA. Therefore, keep the reticle on the target while manually inputting the distance data.

Stadiametric rangefinder – rotating the controller **(6)**, change the distance between the special mark points to determine the distance to the observed object (for more details on the rangefinder, see the **Stadiametric Rangefinder** section).

- Press and hold the **MENU (3)** button to exit the menu or wait 10 seconds to exit automatically.

Main menu

Enter the main menu



1. Enter the main menu with a long press of the **MENU (3)** button.
2. To move through the main menu items, rotate the controller **(6)**.
3. Press the **MENU (3)** button briefly to open subitems of the main menu.
4. Press and hold the **MENU (3)** button to exit from a subitem of the main menu.
5. Automatic exit from the main menu occurs after 10 seconds of inactivity.

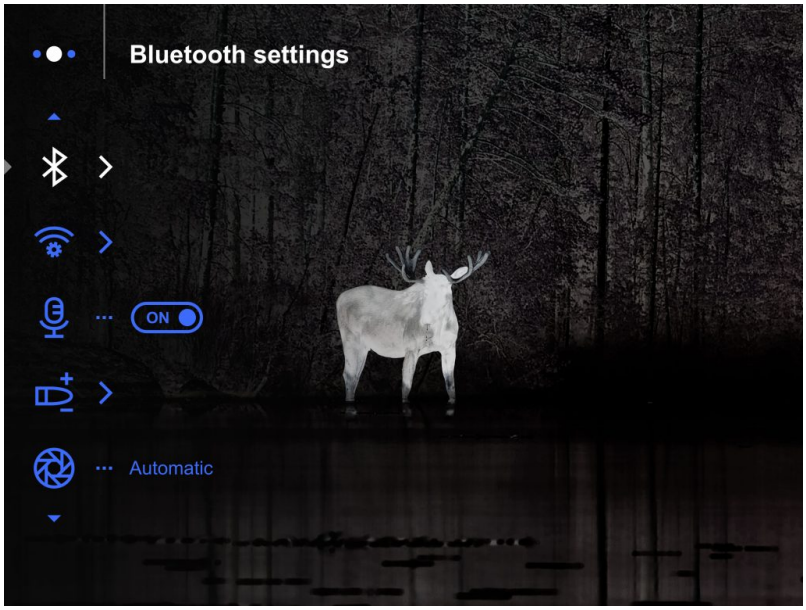
Note: When entering the main menu, the background image darkens to enhance the menu visibility. This is normal and not a defect.

General View of the Menu

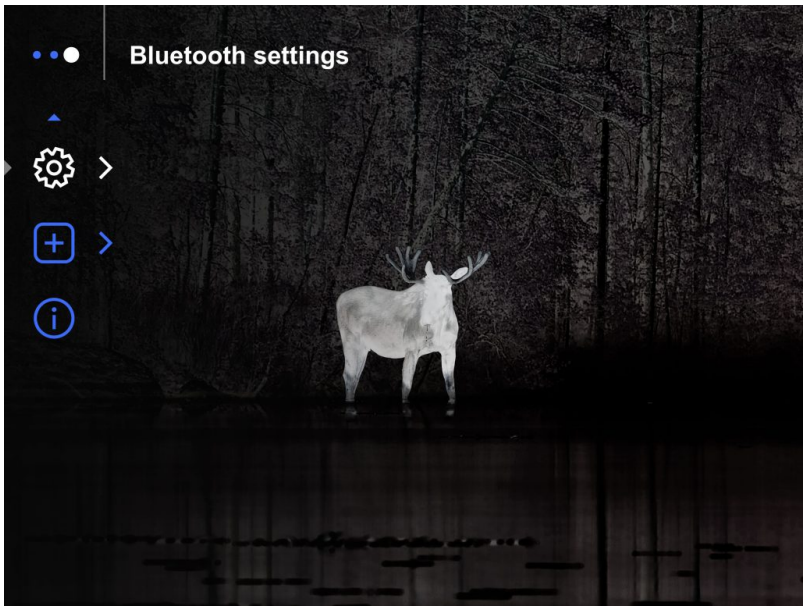
Tab 1



Tab 2

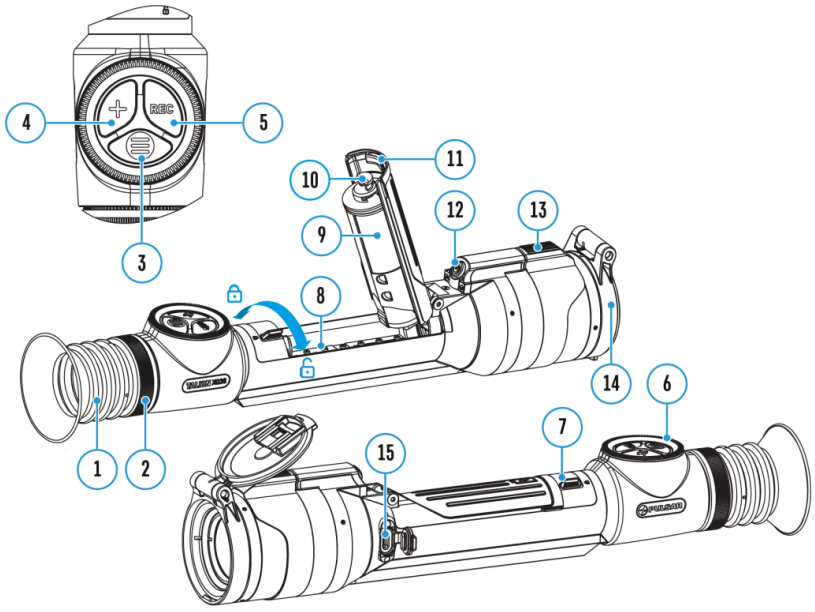


Tab 3



Reticle & Zeroing

Zeroing profile



This item of the main menu allows you to select one of five profiles (A, B, C, D, E, F, G, H, I, J) to use. Each profile stores information on the following parameters:

- A set of zeroed distances

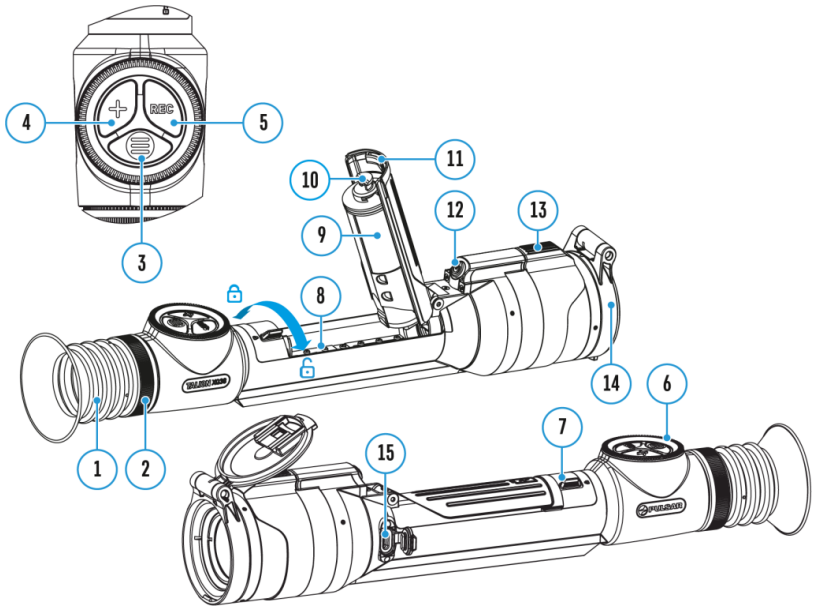
- Reticle color
- Reticle type
- Ballistic profile on/off

Different profiles can be used when using the riflescope on different rifles or when shooting with different bullets.

Zeroing profiles cannot be deleted. You can change the parameters of zeroing distances or delete distances within a profile. You can also change the name of the zeroing profile in the Stream Vision Ballistics App.

1. Press and hold the **MENU (3)** button to enter the main menu.
2. Rotate the controller **(6)** to select the **Reticle & Zeroing** menu item.
3. Press the **MENU (3)** button briefly to enter the Reticle & Zeroing submenu.
4. Press the **MENU (3)** button briefly to enter the **Zeroing Profile** submenu.
5. Rotate the controller **(6)** to select one of the zeroing profiles (marked with the letters A, B, C, D, E).
6. Confirm your selection with a short press of the **MENU (3)** button.
7. The name of the selected profile appears in the status bar at the bottom of the display.

Reticle type

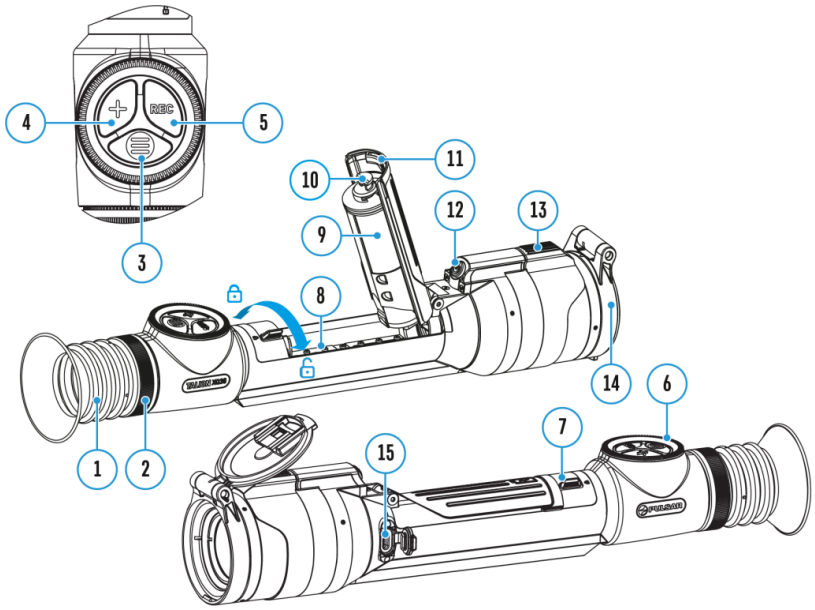


Selection of the aiming reticle shape.

1. Press and hold the **MENU (3)** button to enter the main menu.
2. Rotate the controller **(6)** to select the **Reticle & Zeroing** menu item.
3. Press the **MENU (3)** button briefly to enter the Reticle & Zeroing submenu.
4. Rotate the controller **(6)** to select the **Reticle Type** submenu.
5. Press the **MENU (3)** button briefly to enter the Reticle Type submenu.
6. Rotate the controller **(6)** to select the desired aiming reticle shape from the list that appears. The reticle type changes as the cursor goes down the reticle list.
7. Press the **MENU (3)** button briefly to confirm the selection.

Note: the riflescope supports scalable reticles.

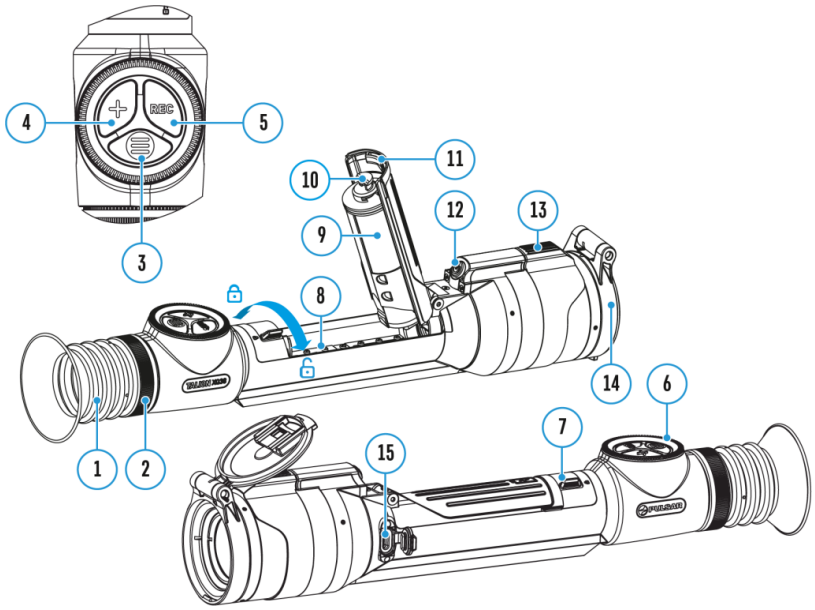
Reticle colour



Selection of reticle colour.

1. Press and hold the **MENU (3)** button to enter the main menu.
2. Rotate the controller **(6)** to select the **Reticle & Zeroing** menu item.
3. Press the **MENU (3)** button briefly to enter the Reticle & Zeroing submenu.
4. Rotate the controller **(6)** to select the **Reticle Color** submenu.
5. Press the **MENU (3)** button briefly to enter the Reticle Color submenu.
6. Rotate the controller **(6)** to select one of the colour options for the reticle: Black/Red, White/Red, Black/Green, White/Green, Red, Green, Yellow, Blue, Orange, Black/White, White/Black.
7. Press the **MENU (3)** button briefly to confirm the selection.

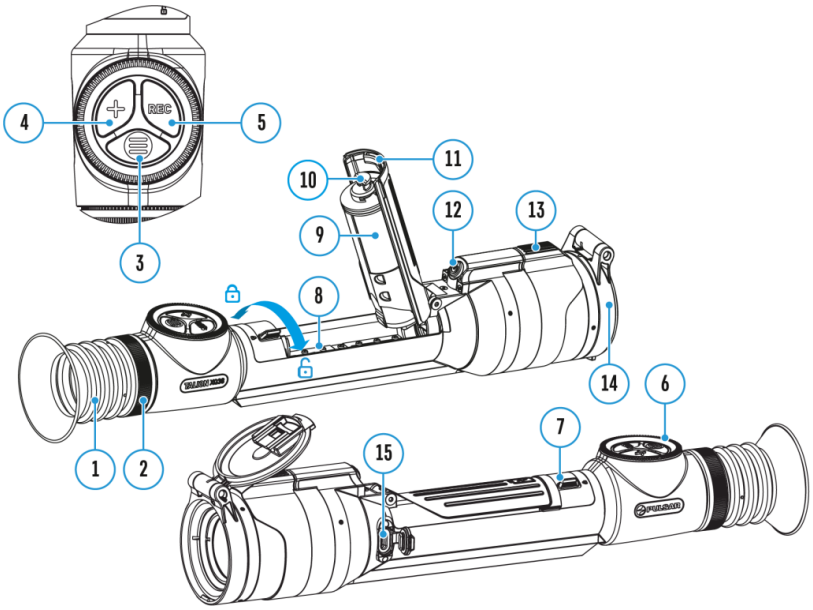
Reticle brightness



Adjust the brightness level of the aiming reticle.

1. Press and hold the **MENU (3)** button to enter the main menu.
2. Rotate the controller **(6)** to select the **Reticle & Zeroing** menu item.
3. Press the **MENU (3)** button briefly to enter the Reticle & Zeroing submenu.
4. Rotate the controller **(6)** to select the **Reticle Brightness** submenu.
5. Press the **MENU (3)** button briefly to enter the Reticle Brightness submenu.
6. Rotate the controller **(6)** to set the desired brightness level (1 to 10).
7. Press the **MENU (3)** button briefly to confirm the selection.

Smoothing filter



Used to reduce digital distortion while maintaining a high level of sensitivity.

Smoothing Filter Off

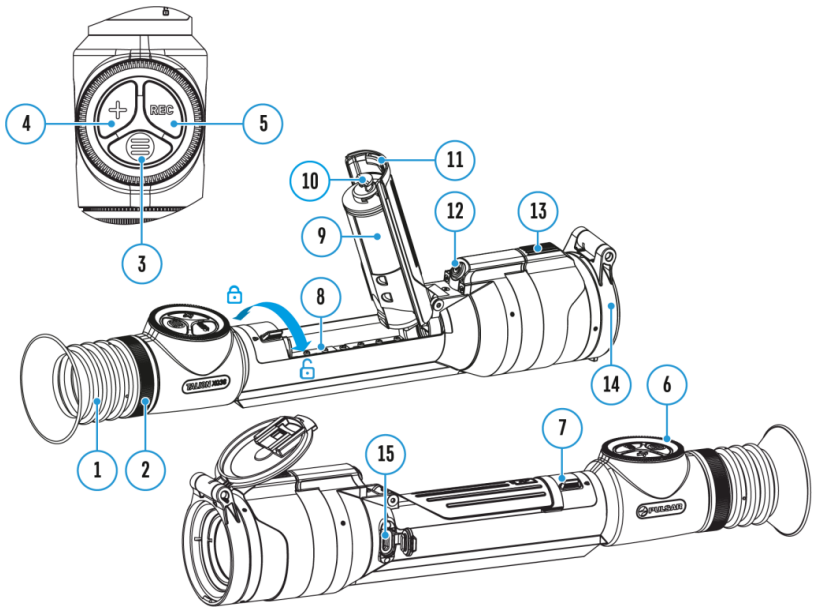


Smoothing Filter On



1. Press and hold the **MENU (3)** button to enter the main menu.
2. Rotate the controller **(6)** to select the **Smoothing Filter** icon.
3. Press the **MENU (3)** button briefly to turn the filter on/off.

Colour modes



Colour mode selection.

White hot is the default display mode.

The Color Modes menu item allows you to select an alternative palette:

1. Press and hold the **MENU (3)** button to enter the main menu.
2. Select the **Color Modes** menu item.
3. Press the **MENU (3)** button briefly to enter the Color Modes submenu.
4. Rotate the controller **(6)** to select one of the palettes described below.
5. Press the **MENU (3)** button briefly to confirm your selection.

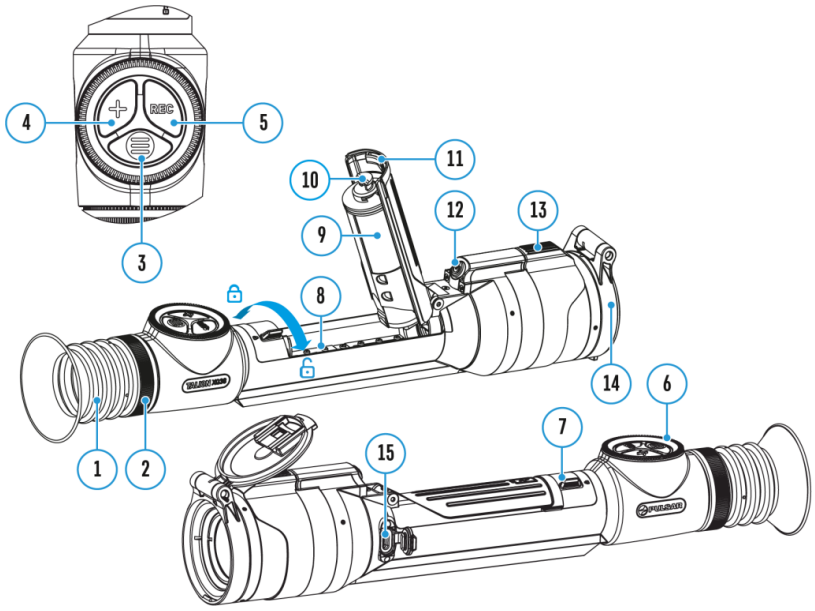
Tip: to preserve brightness and contrast values when switching palettes, activate **Save image settings after shutdown** switch in **User settings** .



- White hot – a black and white palette where black = cold; white = hot
- Black hot – a black and white palette where white = cold; black = hot
- Green
- Red hot
- Red monochrome
- Rainbow
- Ultramarine
- Violet
- Sepia

Attention! The device should not be used to accurately measure temperature. The images generated are based on temperature contrast rather than true temperature readings.

User settings



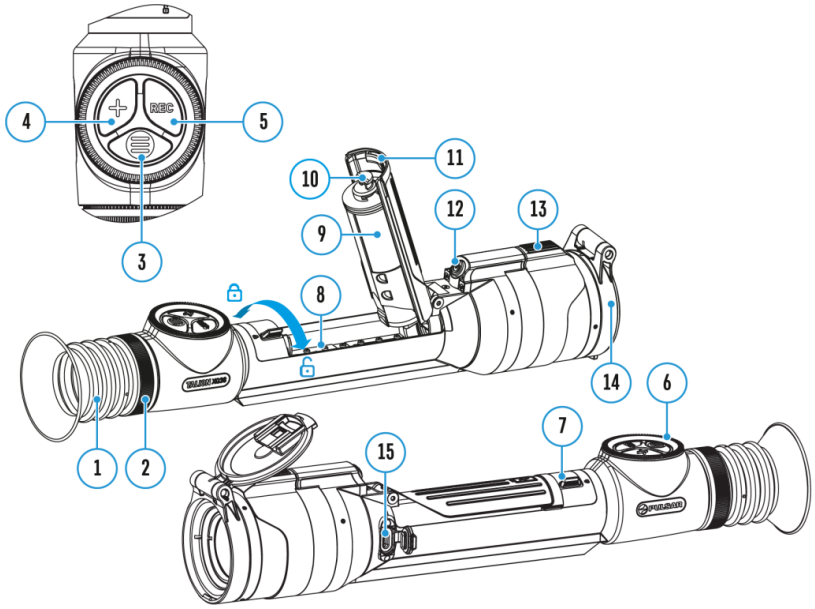
The User Settings submenu allows you to configure and save individual operating preferences in the device's memory, providing optimal convenience for the next use of the thermal imager.

Here one can set the following parameters:

- **Save image settings after shutdown** (saves brightness & contrast).
- **Save zoom after shutdown.**
- **Zoom activation with button.** If activated, smooth zooming is started using the **ZOOM (4)** button. If not activated, zoom level can be adjusted directly by rotating the controller ring without pressing the **ZOOM (4)** button.

1. Press and hold the **MENU (3)** button to enter the main menu.
2. Rotate the controller **(6)** to select the **User Settings** submenu.
3. Press the **MENU (3)** button briefly to open the submenu.
4. Rotate the controller **(6)** to select the desired parameter (**Save image settings after shutdown / Save zoom after shutdown / Zoom activation with button**).
5. Press the **MENU (3)** button briefly to activate/deactivate or confirm the setting.

Display settings



1. Press and hold the **MENU (3)** button to enter the main menu.
2. Rotate the controller **(6)** to select the **Display Settings** menu item.
3. Press the **MENU (3)** button briefly to enter the submenu.

Display dimming

The dimming function is designed to reduce the brightness of the display when using the device in the dark to reduce eye strain.

The Overlay Brightness value in dimming mode will be retained when the function is turned on again.

- Press the **MENU (3)** button to select *On* for turning on the function or *Off* for turning it off.

Overlay Brightness

Adjust the brightness level of the icons and screensavers (Pulsar, Display off) on the display.

1. Press and hold the **MENU (3)** button to enter the main menu.
2. Rotate the controller **(6)** to select the **Overlay Brightness** menu item.
3. Press the **MENU (3)** button briefly to enter the Overlay Brightness submenu.

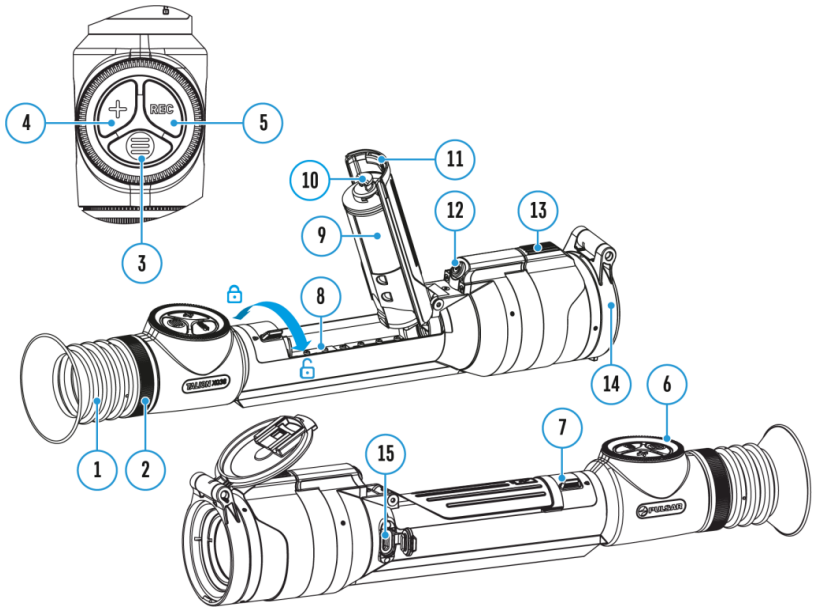
4. Rotate the controller **(6)** to set the desired brightness level (1 to 10).
5. Press the **MENU (3)** button briefly to confirm the selection.

Auto Display off

If this function is enabled, the display turns off automatically when the device is in a vertical or horizontal position. This helps save battery power when the device is not being used.

1. Rotate the controller **(6)** to select the **Auto Display off** icon.
2. Press the **MENU (3)** button button to select *On* for turning on the function or *Off* for turning it off.
3. If you want to switch on the display when the device is in an vertical position, press the **ON/OFF (12)** button.

Bluetooth



Bluetooth Activation

Turn on/off Bluetooth

1. Press and hold the **MENU (3)** button to enter the main menu.

2. Rotate the controller **(6)** to select the **Bluetooth Activation** menu item.

3. A short press of the **MENU (3)** button opens the submenu.

4. Turn Bluetooth on/off with a short press of the **MENU (3)** button.

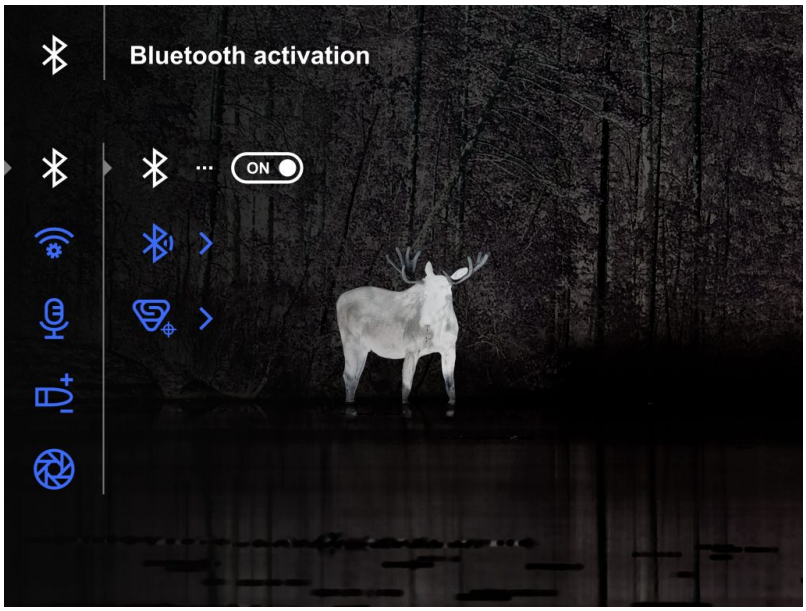
5. Press and hold down the **MENU (3)** button to exit the submenu.

Bluetooth Pairing with Wireless Remote Control

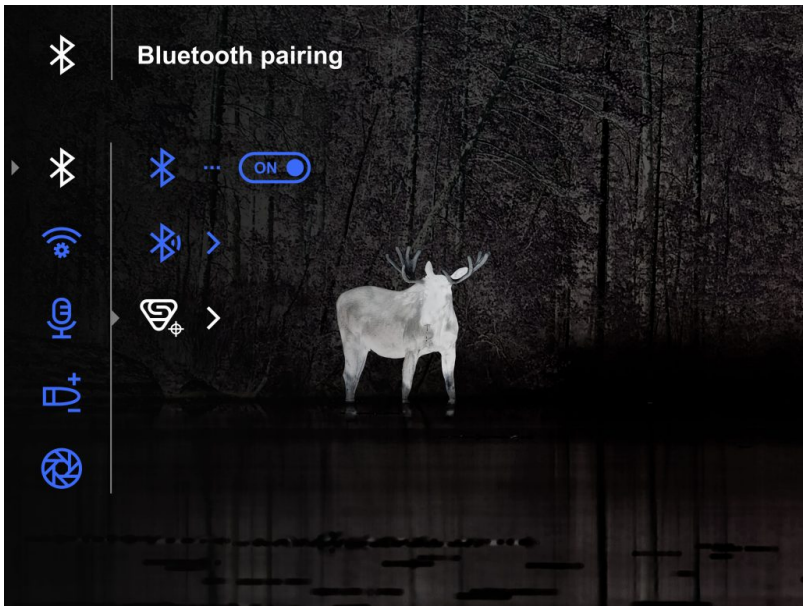
The process of connecting the wireless remote control is described in the **Remote Control Activation** section.

Bluetooth Pairing with Stream Vision Ballistics App

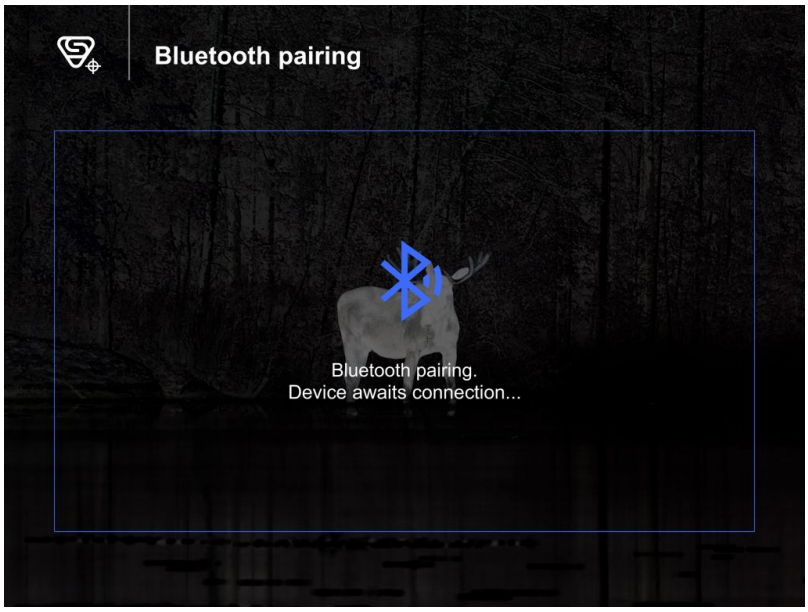
1. Turn on the Bluetooth module.



2. In the **Bluetooth** section of the menu, use the controller **(6)** to select the **Bluetooth pairing** menu item.

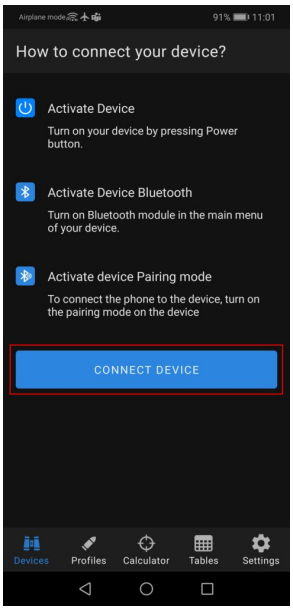


3. Confirm your selection with a short press of the **MENU (3)** button.

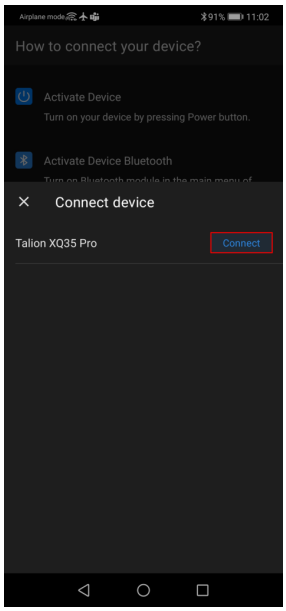


4. Turn on Bluetooth on your smartphone.

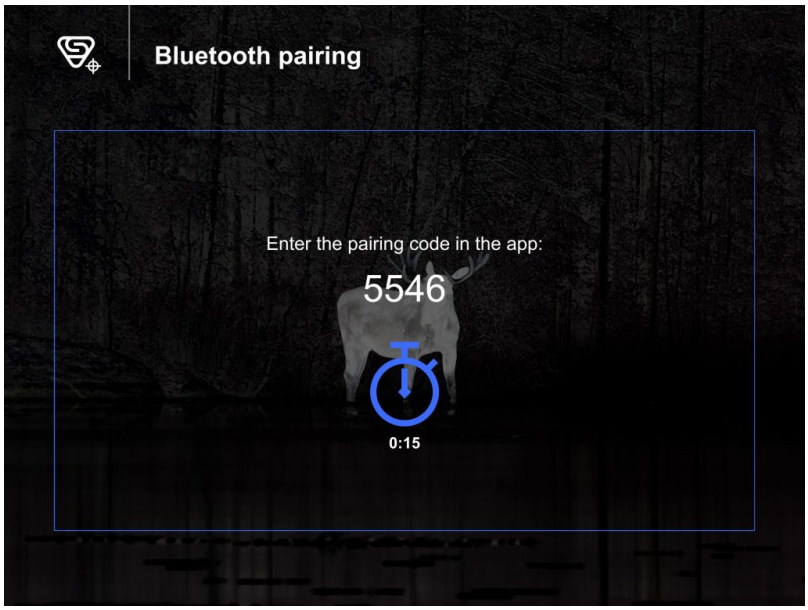
5. Connect your smartphone to the riflescope using the **Stream Vision Ballistics** App (Devices tab → Connect Device button).

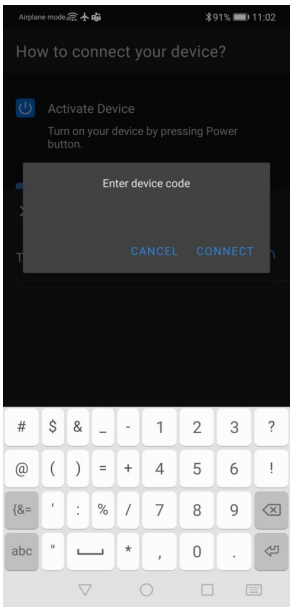


6. Click “Connect” next to your device.

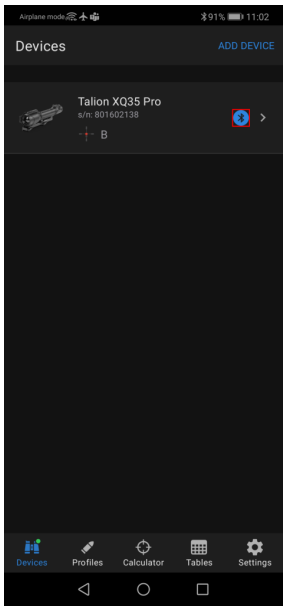


7. Enter the code from the riflescope screen in the Stream Vision Ballistics App and tap “Connect”.

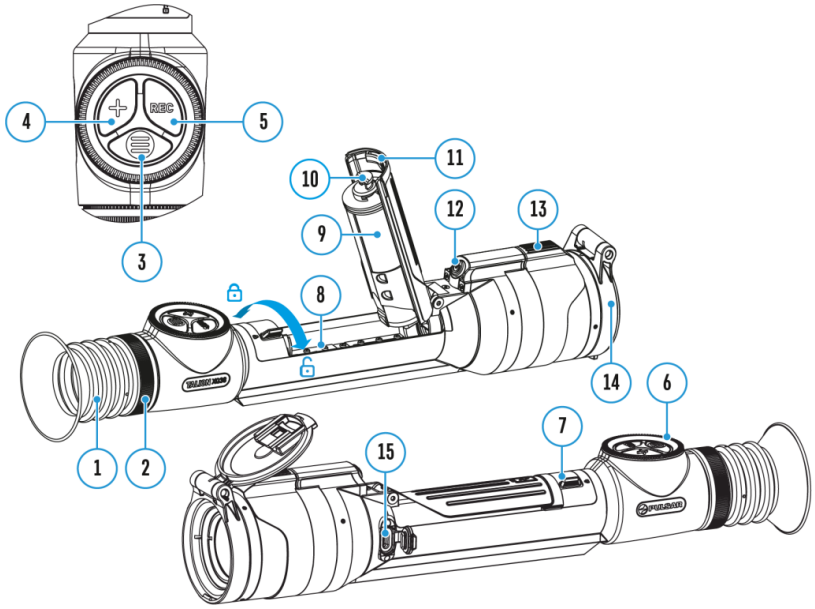




8. The blue Bluetooth icon next to the riflescope means that the riflescope is connected.



Wi-fi settings



This item enables you to set up your riflescope for operation in a Wi-Fi network.

1. Press and hold the controller **MENU (3)** button to enter the main menu.
2. Rotate the controller **(6)** to select the **Wi-Fi Settings** submenu.
3. Press the **MENU (3)** button briefly to enter the submenu
4. Rotate the controller **(6)** to select the desired menu item.

Wi-Fi Activation

Turn on/off Wi-Fi

1. Rotate the controller **(6)** to select the **Wi-Fi Activation** menu item.
2. To turn Wi-Fi on, briefly press the **MENU (3)** button. ON
3. To turn Wi-Fi off, briefly press the **MENU (3)** button. OFF

Password Setup

This item enables you to set a password to access the riflescope from an external device. The password is used to connect an external device (i.e. smartphone) to the riflescope.

1. Press the **MENU (3)** button to enter the **Password Setup** PAS submenu.

2. The unique password only for your device will appear on the image.
3. Rotate the controller **(6)** to set the desired password. Press the **MENU (3)** button to toggle through the digits.
4. Press and hold the **MENU (3)** button to save the password and exit from the submenu.

Access Level Setup

This sub-function enables you to configure the appropriate level of access to your device made available to the Stream Vision 2 application.

Owner level. A Stream Vision 2 user has full access to all the device's functions.

Guest level. A Stream Vision 2 user can only view video footage from the device in real time.

1. Press the **MENU (3)** button to enter the **Access Level Setup** submenu.
2. Rotate the controller **(6)** to select **Owner** or **Guest**.
3. Confirm your selection with a short press of the **MENU (3)** button.

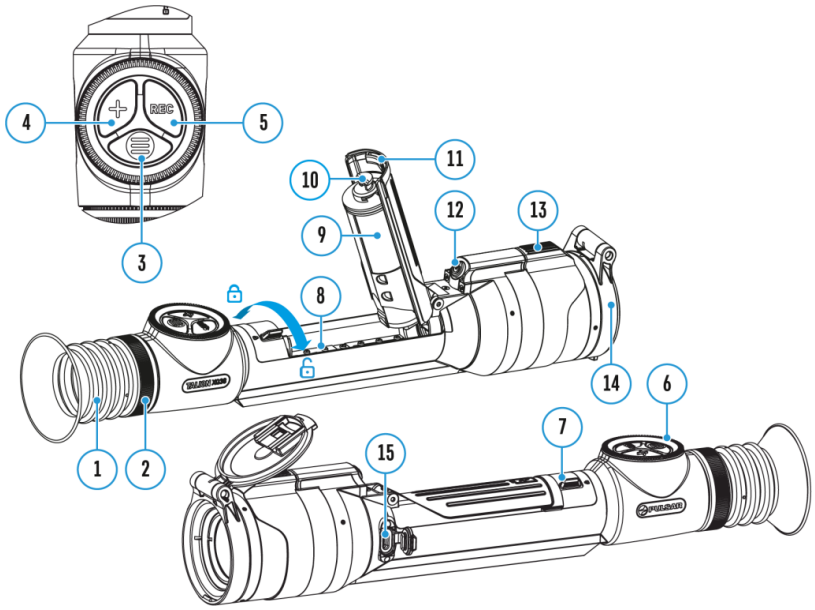
Wi-Fi Band

This setting helps to solve a smartphone connection issue in the following cases:

- If your smartphone does not support 5 GHz Wi-Fi band, switch to 2.4 GHz band.
- Many Wi-Fi networks may cause interference. In this case, switching between Wi-Fi bands can improve the connection between the device and smartphone.

1. Press the **MENU (3)** button to enter the **Wi-Fi Band** submenu.
2. Rotate the controller **(6)** to select the Wi-Fi bandwidth – **5 GHz** or **2.4 GHz**.
3. Confirm your selection with a short press of the **MENU (3)** button.

Microphone

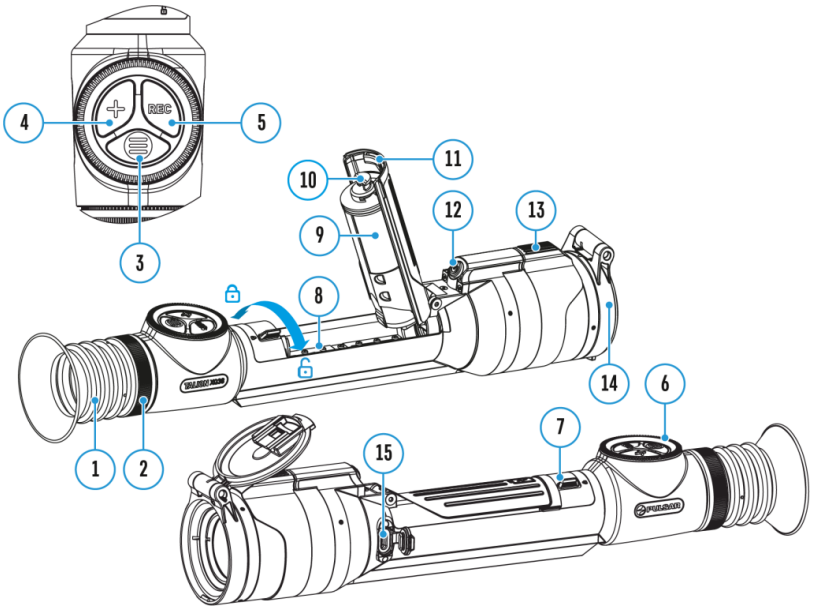


Turning on/off Microphone.

This item allows you to enable (or disable) the microphone for recording sound during video recording.

1. Press and hold the **MENU (3)** button to enter the main menu.
2. Rotate the controller **(6)** to select the **Microphone** menu item.
3. To turn on the microphone, briefly press the controller **MENU (3)** button.
   ON
4. To turn off the microphone, briefly press the controller **MENU (3)** button.
   OFF

Ballistics



This section contains parameters for the ballistic calculator in the riflescope.

1. Enter the main menu with a long press of the **MENU (3)** button.
2. Rotate the controller **(6)** to select the submenu **Ballistics** .
3. Enter the submenu with a short press of the **MENU (3)** button.
4. Rotate the controller **(6)** to select the desired menu item.

Ballistics Activation

The Ballistic calculator function shows the recommended aiming point and correction values. For more information on using the function, see the section **Ballistic Calculator.**

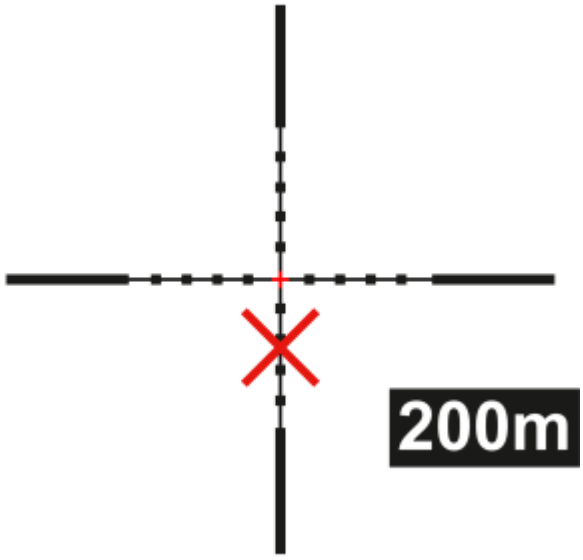


1. Rotate the controller **(6)** to select **Ballistics Activation** .

2. Turn the Ballistic Calculator on/off with a short press of the **MENU (3)** button.

Auxiliary Indication of Distance

The “Auxiliary indication of distance” function shows an additional window with the result of measuring the distance near the reticles of the rangefinder or ballistic calculator.



1. Rotate the controller **(6)** to select **Auxiliary indication of distance** .
2. Press briefly the **MENU (3)** button to enter submenu.
3. Rotate the controller **(6)** to select the display mode: Off, Bound to reticle mark or Bound to SPOA mark.
4. Confirm selection with a brief press of the **MENU (3)** button.

SPOA Mark Type

1. Rotate the controller **(6)** to select the **SPOA Mark Type** menu item.
2. Press briefly the **MENU (3)** button to enter submenu.
3. Rotate the controller **(6)** to select one of the three reticle shapes for the suggested point of aiming .
4. Confirm selection with a brief press of the **MENU (3)** button.
5. The selected reticle will appear on the display when using the **Ballistic Calculator.**

Notes:

- MilLine is a line with 1 mil grooves. It scales as the magnification changes. It is designed for shooting with aiming off for adjustment depending on wind direction: the entire line moves vertically. As for the horizontal direction, you can navigate by grooves. If the weather correction function is turned on, the cross on the line will also move to the side.

SPOA Mark Color

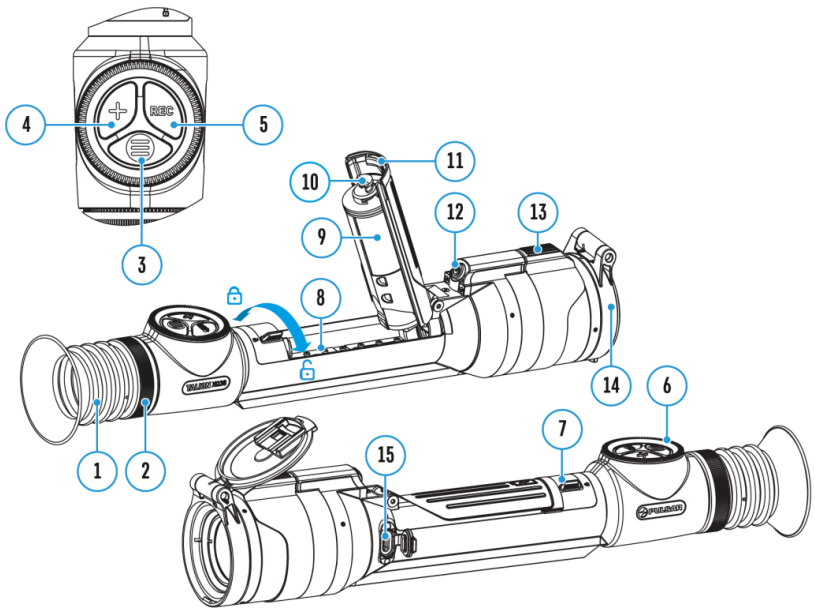
1. Rotate the controller **(6)** to select the **SPOA Mark Color** menu item.
2. Press briefly the **MENU (3)** button to enter submenu.
3. Rotate the controller **(6)** to select one of color combinations for the suggested point of aiming.
4. Confirm selection with a brief press of the controller **MENU (3)** button.

Ballistic Calculator Units

In this item, you can change or disable the units for the ballistic calculator corrections.

1. Rotate the controller **(6)** to select the **Ballistic Calculator Units** menu item.
2. Briefly press the **MENU (3)** button to enter the submenu.
3. Rotate the controller **(6)** to select one of the three units (MOA, MRAD, Click) or Off to disable the units.
4. Confirm your selection with a brief press of the **MENU (3)** button.

Calibration mode



Calibration mode selection.

Calibration eliminates image flaws (such as vertical bars, phantom images, grainy field of view, etc.) by equalizing the microbolometer background temperature.

There are three calibration modes: **manual, semi-automatic** and **automatic**.

The selected calibration mode is displayed in the status bar (see **Status Bar** section).

Select the required mode in the Calibration Mode menu:

1. Press and hold the **MENU (3)** button to enter the main menu.
2. Rotate the controller **(6)** to select the **Calibration Mode** menu item.
3. Press the **MENU (3)** button briefly to enter the Calibration Mode submenu.
4. Rotate the controller **(6)** to select one of the calibration modes described below.
5. Press the **MENU (3)** button briefly to confirm your selection.

M mode (manual)

- Close the lens cover **(14)** and press the **ON/OFF (12)** button briefly.
- Open the cover after the calibration is completed.

SA mode (semi-automatic)

- The user independently determines the need for calibration (according to the image being observed).
- Press the **ON/OFF (12)** button briefly to activate calibration.
- There is no need to close the lens cover (internal shutter covers the microbolometer).

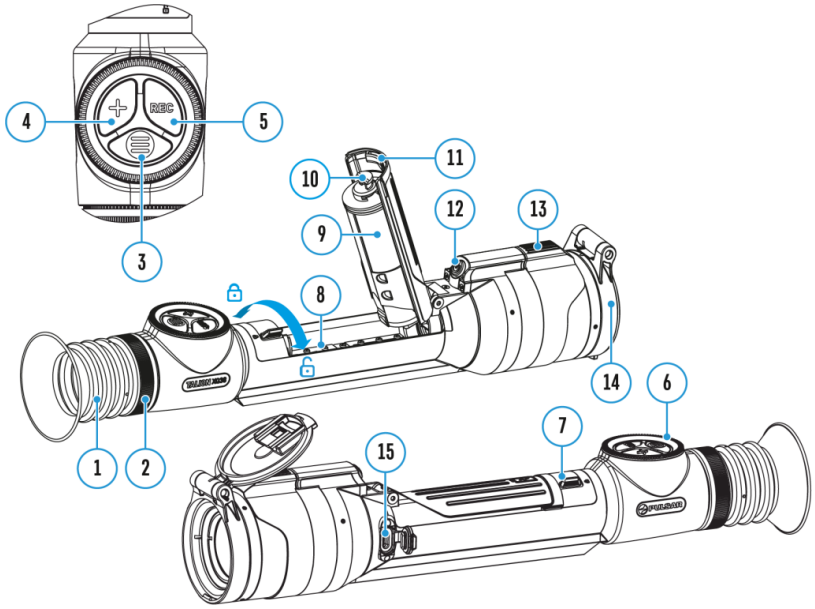
A Mode (automatic)

- The riflescope is calibrated autonomously according to the software algorithm.
- There is no need to close the lens cover (internal shutter covers the microbolometer).
- In this mode, the riflescope may be calibrated by the user with the **ON/OFF (12)** button.
- A countdown timer :05 will appear instead of the calibration icon when in automatic calibration mode with 5 seconds remaining until automatic calibration.

Notes:

- During calibration, the image on the display briefly freezes for up to 1 second.
- The selected calibration mode is saved after restarting the device.

General settings



1. Press and hold the **MENU (3)** button to enter the main menu.
2. Rotate the controller **(6)** to select the **General settings** menu item.
3. Press the **MENU (3)** button briefly to enter the submenu.
4. Rotate the controller **(6)** to select the desired menu item.

This menu item allows you to configure the following settings:

Language

Language selection:

1. Press the **MENU (3)** button briefly to enter the **Language** submenu.
2. Rotate the controller **(6)** to select one of the available interface languages: English, German, Spanish, French, Russian, Italian, Portuguese, Dutch, Danish, Norwegian, Swedish, Polish, Czech, Hungarian, Bulgarian, Finnish, Lithuanian, Latvian, Ukrainian.
3. Confirm your selection with a short press of the **MENU (3)** button.
4. Press and hold the **MENU (3)** button to save your selection and exit from the submenu.

Date

Date Setting:

1. Press the **MENU (3)** button briefly to enter the **Date** submenu. The date is displayed in dd/mm/yyyy format.
2. Rotate the controller **(6)** to select the desired year, month and date. Press the **MENU (3)** button briefly to switch between digits.
3. Press and hold the **MENU (3)** button to save your selected date and exit from the submenu.

Time

Time Setting:

1. Press the **MENU (3)** button briefly to enter the **Time** submenu.
2. Rotate the controller **(6)** to select the time format – 24 or AM/PM.
3. Press the **MENU (3)** button to proceed to the hour setting.
4. Rotate the controller **(6)** to select the hour value.
5. Press the **MENU (3)** button to proceed to the minute setting.
6. Rotate the controller **(6)** to select the minutes value.
7. Press and hold the **MENU (3)** button to save your selected time and exit from the submenu.

Units of Measure

Units of measurement selection:

1. Press the **MENU (3)** button briefly to enter the **Units of Measure** submenu.
2. Rotate the controller **(6)** to select the unit of measurement – meters or yards, press the **MENU (3)** button.
3. Return to submenu will happen automatically.

Video Compression

When set to ON, standard video compression is applied so the video file size is reduced.

When set to OFF, minimal video compression is applied. In this case, the quality of the recorded video is better, but its size is significantly increased.

Warning! Larger video file size results in shorter total video recording time. This may lead to longer download times for video files through the Stream Vision 2 mobile application**.**

Enable/disable video compression:

1. Rotate the controller **(6)** to select the **Video Compression** menu item.
2. To turn on video compression, briefly press the **MENU (3)** button. ON
3. To turn off video compression, briefly press the **MENU (3)** button. OFF

Advanced recording

The **Advanced recording** function provides extended options for automatic video capture.

Shadow recording

When active, pressing the **REC (5)** button saves a video file starting **30 seconds before** the button was pressed and continues until recording 00:30 is stopped. To stop recording, press and hold the **REC (5)** button.

1. Enter **General settings** → **Advanced recording**
2. Rotate the controller ring **(6)** to select **Shadow recording** .
3. Press the controller button **(6)** to turn the function on/off.

Recoil recording

When recoil-activated recording 00:30 is enabled, video recording starts **30 seconds before the first** detected shot and ends **30 seconds after the last shot**.

If additional shots are detected during recording, the recording continues in the same file, and the duration is extended by 30 seconds from each subsequent shot. The maximum length of a single video file is 5 minutes.

1. Enter **General settings** → **Advanced recording** .
2. Rotate the controller **(6)** to select **Recoil recording** .
3. Press the **MENU (3)** button to open the submenu.
4. Rotate the controller **(6)** to select one of the options: **Off, High sensitivity, Medium sensitivity, Low sensitivity**.
5. Press the **MENU (3)** button briefly to confirm.

Note:
To select the appropriate sensitivity level, it is recommended to make a test shot, for

example, at a shooting range.

- If **Recoil recording** does not activate when firing, increase the sensitivity level.
- If recording starts automatically when shaking the weapon, decrease the sensitivity level.

Auto Shutdown Options

1. Rotate the controller **(6)** to select **Auto Shutdown Options** .
2. Press the **MENU (3)** button to enter the submenu.

If device inactive for 30 min

When this feature is enabled, the device automatically turns off after 30 minutes of inactivity **Display off** mode.

1. Rotate the controller **(6)** to select **If device inactive for 30 min** .
2. Press the **MENU (3)** button to select *On* for turning on the function or *Off* for turning it off.

If in idle position

1. Rotate the controller **(6)** to select **If in idle position** .
2. Press the **MENU (3)** button to enter the submenu.
3. Rotate the controller **(6)** to select the time period **(1 min, 3 min, 5 min)** upon expiry of which the riflescope will automatically shut down, or select **Switch off** if you wish to deactivate Auto Shutdown.
4. Confirm your selection with a short press of the **MENU (3)** button.

Note: If the automatic shutdown function is activated, the status bar shows an icon and shutdown time period as 1/3/5 min.

Side Incline

This item allows you to activate or deactivate the “sector” arrows on the sides of the display. These arrows show the direction in which your rifle scope should be rotated to

eliminate incline.



There are three modes of incline:

- 5°-10° – one sector arrow;
- 10°-20° – two sector arrow;
- > 20° – three sector arrow.

A side incline of less than 5° is not displayed.

1. Rotate the controller **(6)** to select **Side Incline** .
2. Press the **MENU (3)** button to select *On* for turning on the incline indication or *Off* for turning it off.

Default Settings

1. Press the **MENU (3)** button briefly to enter the **Default Settings** submenu.
2. Rotate the controller **(6)** to select *"Yes"* to restore default settings or *"No"* to cancel the action.
3. Confirm your selection with a short press of the **MENU (3)** button.

- If *"Yes"* is selected, display will show *"Do you want to restore default settings?"* and *"Yes"* and *"No"* options. Select *"Yes"* to restore default settings.
- If *"No"* option is selected: the action will be aborted and you will return to the submenu.

The following settings will be returned to their defaults:

- **Video recorder mode** – Video

- **Amplification level** – Normal
- **Smoothing filter** – Off
- **Calibration mode** – automatic
- **Interface language** – English
- **Wi-Fi** – off (unique password)
- **Magnification** – initial value (without digital zoom)
- **PiP** – Off
- **Colour mode** – White hot
- **Units of measurement** – metric
- **Side incline** – Off
- **Zeroing profile** – A
- **Reticle selection from the riflescope's memory** – 1
- **Video compression** – Off
- **Wi-Fi band –** 2.4 GHz
- **Ballistic calculator** – On
- **Ballistic calculator units** – MOA
- **Display dimming** – Off
- **Auto shutdown if device inactive for 30 min** – On

Attention! After restoring default settings, the date, time and user pixel map as well as the zeroing profiles data entered by the user are saved.

Format

This menu option allows you to format the device's memory card. All files will be deleted.

Formatting should be carried out in case of a memory card error.

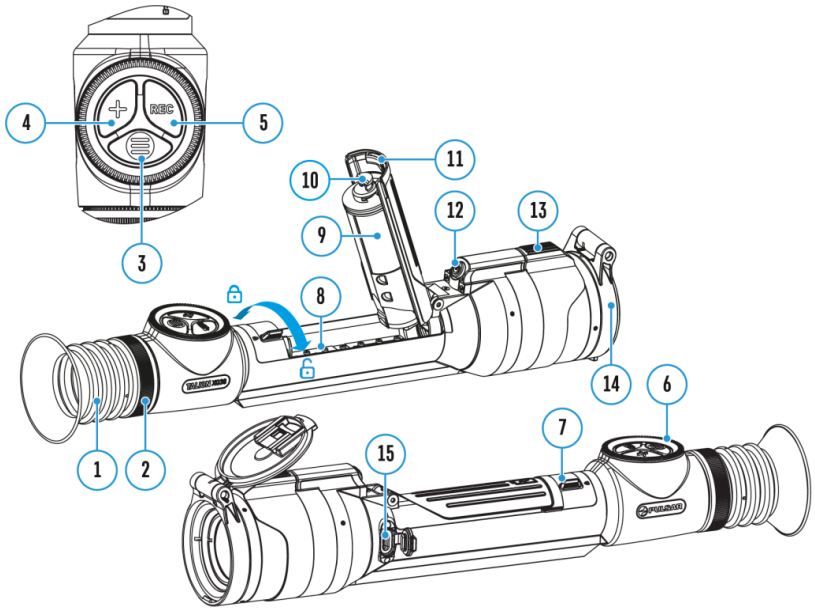
Before formatting, make sure you transfer all footage to other media.

1. Press the **MENU (3)** button briefly to enter the **Format** submenu.
2. Rotate the controller **(6)** to select *"Yes"* to format the memory card, or *"No"* to return to the submenu.
3. Confirm your selection by pressing the **MENU (3)** button.

- If the *"Yes"* option has been selected, the *"Do you want to format memory?"* message and *"Yes"* and *"No"* options will appear on the display. Select *"Yes"* to format the memory card.
- If *"No"* option is selected: formatting is cancelled and return to the submenu.

Defective Pixel Repair

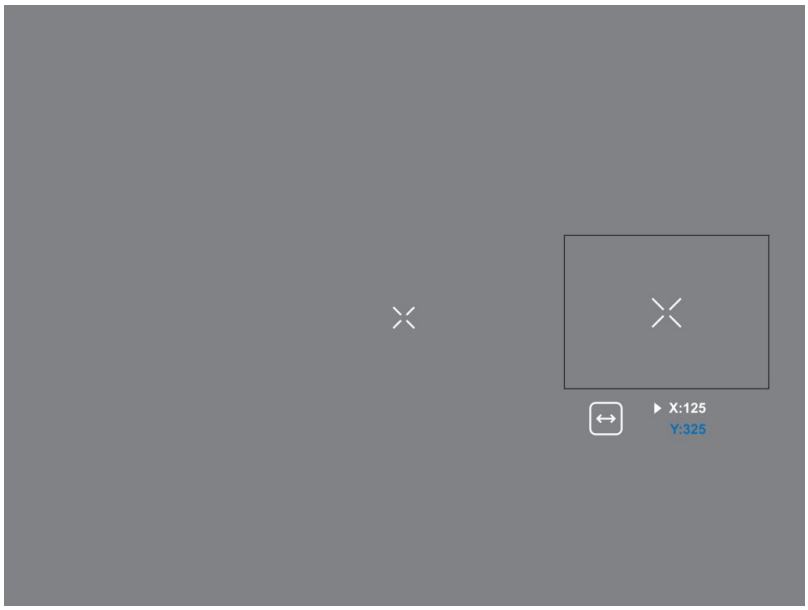
Defective pixel repair



When using the device, defective (dead) pixels may appear on the microbolometer. These are bright or dark points of a constant brightness that are visible on the image.

Defective pixels on the microbolometer can increase in size relative to the digital-zoom power.

The Talion thermal riflescope allows the user to remove any defective pixels on the display, as well as cancel removal, via the device's firmware.



Step 1. Enter the menu to fix the defective pixels

1. Press and hold the **MENU (3)** button to enter the main menu.

2. Rotate the controller **(6)** to select the **Defective Pixel Repair** menu item.

3. Press the **MENU (3)** button to open the submenu.

4. Press the **MENU (3)** button briefly to select the icon .

Step 2. Select the defective pixel

1. A marker will appear on the centre of the display. A “magnifying glass” will appear on the right side of the display — a rectangle with an enlarged view of the marker for precise pixel selection — and marker coordinates under the “magnifying glass”.



2. Rotate the controller **(6)** to move the marker to align its center with the defective pixel.

3. Press the **MENU (3)** button shortly to switch the marker direction from the horizontal to the vertical and vice versa.

4. Rotate the controller **(6)** to align the defective pixel with the fixed cross in the frame – the pixel should disappear.

Step 3. Remove the defective pixel

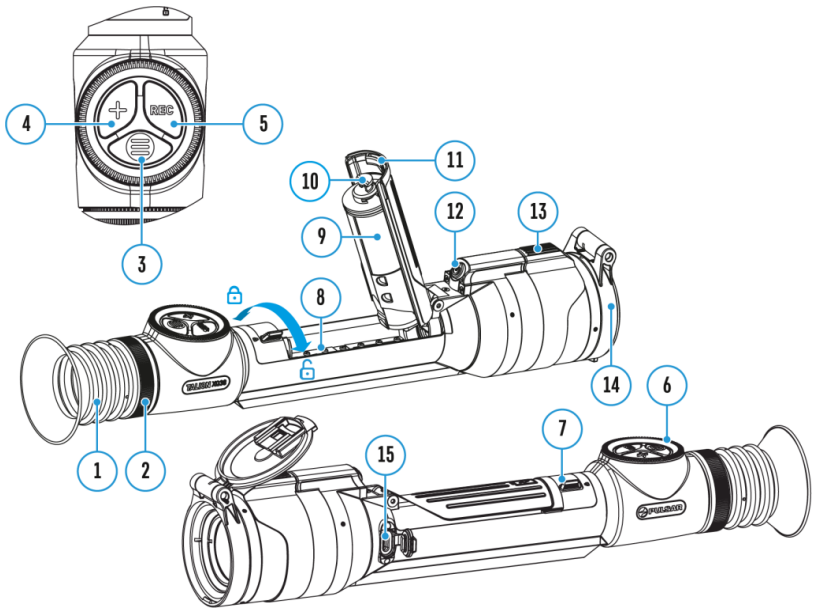
1. Delete the defective pixel with a short press of the **ON/OFF (12)** button.

2. Where the pixel has been successfully deleted, the *OK* message will appear on the screen for a short time.

3. Then, by moving the marker across the display, you can delete the next defective pixel.

4. Press and hold the **MENU (3)** button to exit the Defective Pixel Repair function.

Restore default pixel map



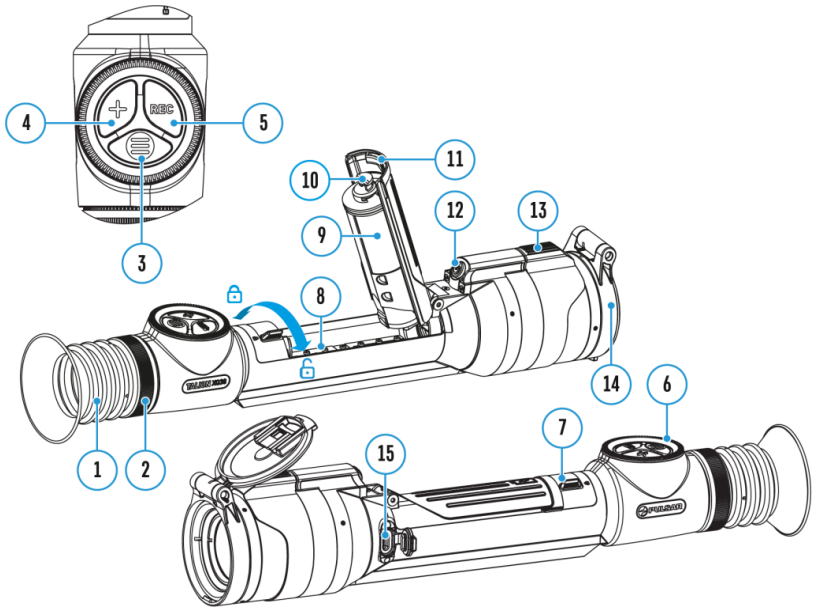
This option allows the user to return all previously disabled defective pixels to their original state.

1. Press and hold the **MENU (3)** button to enter the main menu.
2. Rotate the controller **(6)** to select the **Defective Pixel Repair** icon.
3. Press the **MENU (3)** button to enter the submenu.
4. Rotate the controller **(6)** to select the **Restore Default Pixel Map** icon .
5. Activate the function by briefly pressing the **MENU (3)** button.

6. Rotate the controller **(6)** to select *Yes* if you want to return to the factory pixel map or select *No* if you do not.
7. Confirm your selection with a short press of the **MENU (3)** button.

Attention! One or two pixels on the display of the device in the form of bright white, black or colored (blue, red or green) points may appear. These points cannot be removed and are not a defect.

Device information



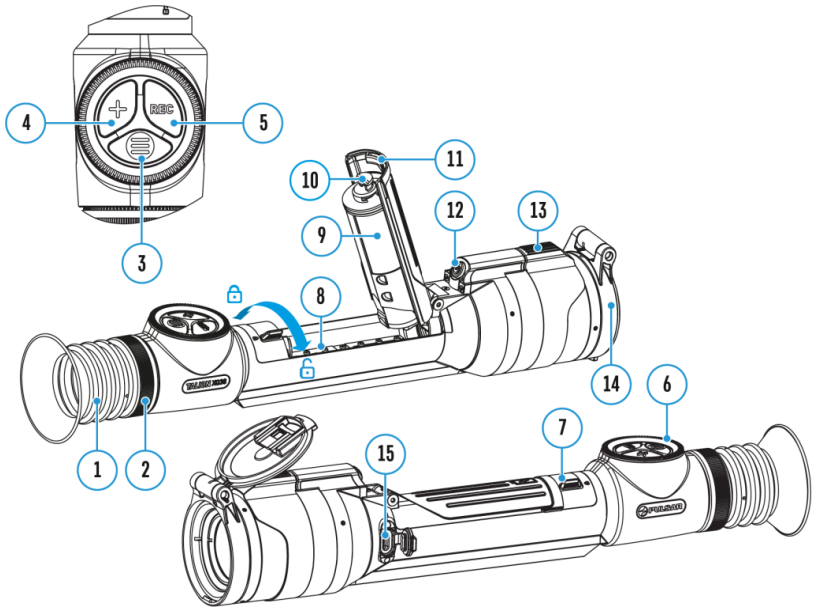
1. Press and hold the **MENU (3)** button to enter the main menu.
2. Rotate the controller **(6)** to select the **Device Information** ⓘ menu item.
3. Press the **MENU (3)** button briefly to enter the Device Information submenu.

This item allows the user to view the following information about the riflescope:

- Full name of the riflescope
- SKU number
- Serial number of the riflescope
- Riflescope firmware version
- Hardware version
- Service information
- Battery information

Functions

Amplification level



Sensitivity enhancement levels (Normal, High, Ultra) are software algorithms that enhance the quality of detection and recognition in various observation conditions. When the temperature contrast decreases (fog, precipitation, high humidity), it is recommended to increase the amplification level. To optimize the image, activate the **Smoothing Filter** in the main menu.

Normal



High

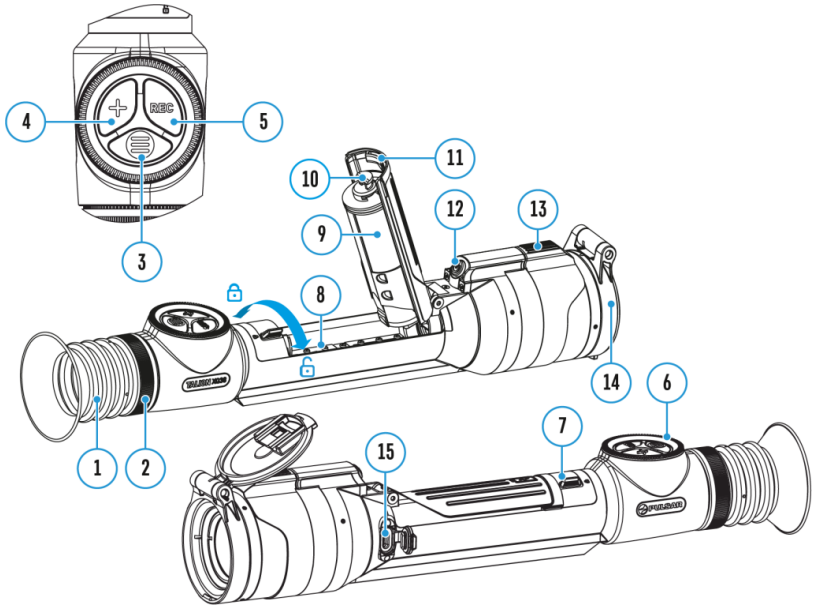


Ultra



1. Press and hold the **MENU (3)** button to enter the quick menu.
2. By short pressing the **MENU (3)** button select the menu item **Amplification level** .
3. Rotate the controller **(6)** to select one of the levels: Normal , High , Ultra .
4. Press and hold the **MENU (3)** button to exit the menu or wait for 3 seconds to exit automatically.

Video recording and photography



The riflescope is capable of video recording and photography. Videos and images are saved on the built-in memory card.

Before using the photo and video functions, read the **Date** and **Time** subsections of the **General Settings** section.

For information on how to watch recorded photos and videos, see the Stream Vision 2 user manual: **Android, iOS**.

The built-in recorder operates in two modes **– Video** and **Photo.**

Video mode. Video recording



1. Switch to **Video** mode by pressing and holding the **REC (5)** button.

2. The icon and the remaining recording time in HH:MM (Hours:Minutes) format are displayed in the upper left corner, for example 4:20.

3. Press the **REC (5)** button briefly to start video recording.

4. When the video recording starts, the icon will disappear and the REC icon and timer in MM:SS (Minutes:Seconds) format will appear **0:03**.



5. Pause and resume recording video with a short press of the **REC (5)** button.

6. Stop recording video with a long press of the **REC (5)** button.

7. Video files are saved to the built-in memory card after the video recording has been stopped.

8. Press and hold the **REC (5)** button to switch between the **Video** and **Photo** modes (Video→ Photo→ Video...)

Photo Mode. Capturing an image



1. Switch to the **Photo** mode by pressing and holding the **REC (5)** button.

2. Press the **REC (5)** button briefly to take a photo. The icon flashes – the photo file is being saved to the built-in SD card.

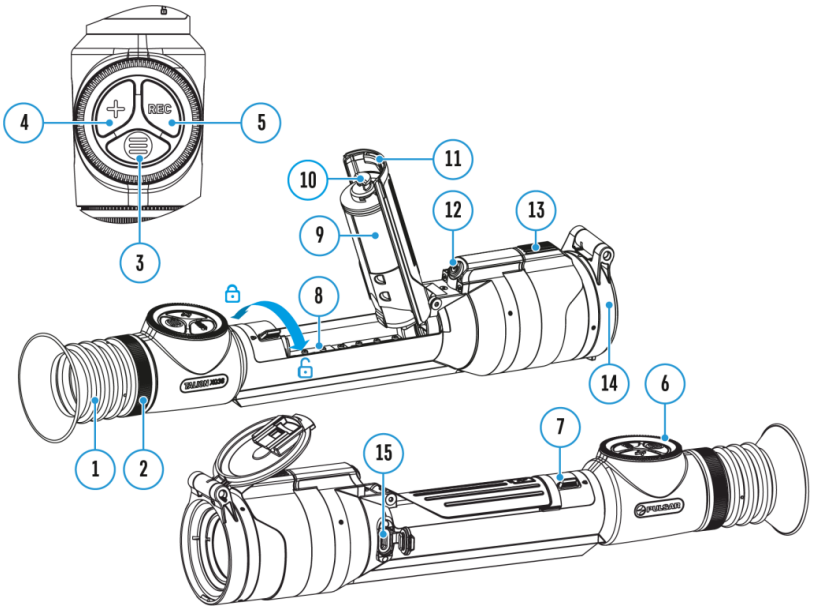
Video files are stored in the built-in memory card:

- After turning off the video recording;
- Upon powering the riflescope off if recording was on;
- When the memory card is overfilled during recording (Memory Full message appears on the display).

Notes:

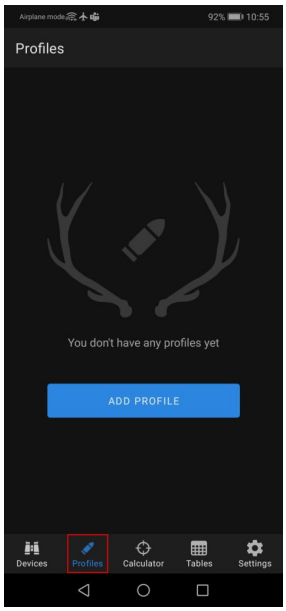
- You can enter and navigate the menu during video recording.
- Recorded videos and photos are saved to the built-in memory card of the riflescope in the format img_xxx. jpg (for photos); video_xxx. mp4 (for video).
- Videos are recorded in clips with a maximum duration of 5 minutes. The number of recorded files is limited by the capacity of unit's internal memory.
- Regularly check free memory within the built-in memory card and move the footage to other storage media to free up the memory card space.
- In case of a memory card error, you can use the format function in the **General Settings** section of the main menu.
- When the Display Off function is activated, video recording continues to run in the background.
- For automated recording of shots, activate **Recoil recording** in **General Settings** **→ Advanced recording** .
- To avoid missing the recording of an important event, activate **Shadow recording** **General Settings** **→ Advanced recording** . In this mode, video recording starts 30 seconds before you press the REC button.

Ballistic calculator

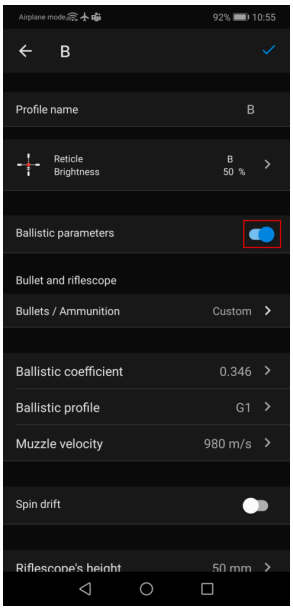


1. Install the Stream Vision Ballistics app from **Google Play** or **AppStore**.

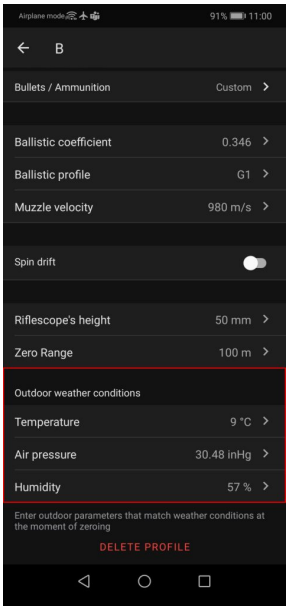
2. Go to Profiles tab.



3. Create a profile for your riflescope, ammunition and zeroing distance. Make sure that “Ballistic parameters” switch is on. If your ammo is not on the list, you can enter its parameters manually. The more parameters you specify, the more accurate the recommended point of aiming will be.



4. Adjust the temperature, pressure and humidity of the environment while zeroing your riflescope.

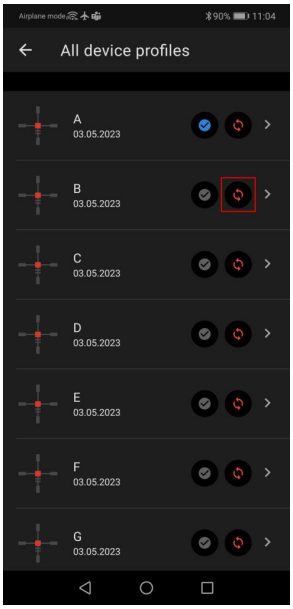


5. Enter a profile name and click save ✓ .

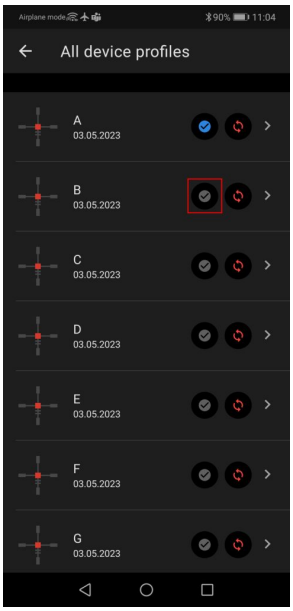
6. Connect your riflescope to your smartphone using Bluetooth. First, make sure that your riflescope has the latest firmware version 3.0 or higher installed.

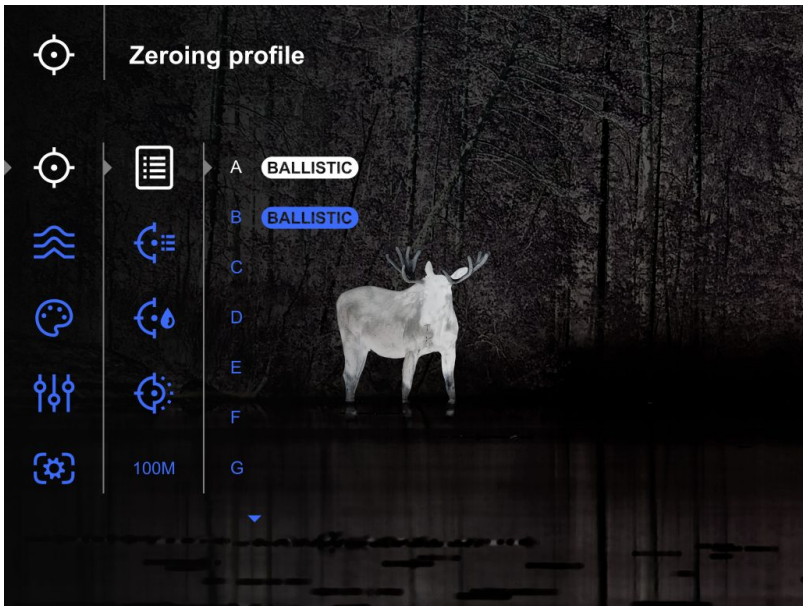
7. Load the profile into the riflescope.

To do this, go to the “Devices” tab → Select your riflescope → “All device profiles” → click  on the profile you want to replace and select the created profile from the list.

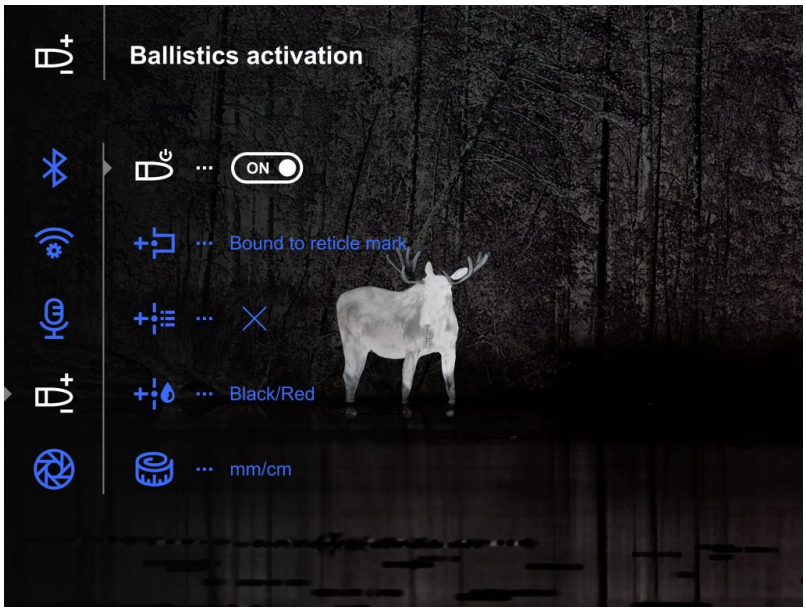


8. Set the status to “Active” for the ballistic profile. To do this, click on the button  next to the desired profile, or select it in the profile selection menu in the riflescope.





9. Make sure that the Ballistic Activation option is enabled in the riflescope's **Ballistics** menu.



10. Select the desired distance in the quick menu:

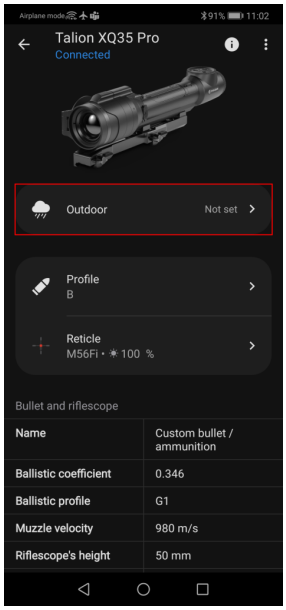
- Press the **MENU (3)** button briefly to enter the quick menu.
- Briefly press the **MENU (3)** button to select .
- Rotate the controller **(6)** to select the desired distance. The SPOA mark will shift based on the selected distance. Note, that ballistic calculator uses angle/elevation readings of your riflescope in order to calculate the SPOA. Therefore, keep the reticle on the target while manually inputting the distance data.
- Press and hold the **MENU (3)** button to exit the menu or wait 10 seconds to exit automatically.



11. Check the accuracy of your profile settings with a test shot at the shooting range.

Note: profiles for different types of ammunition must be zeroed separately.

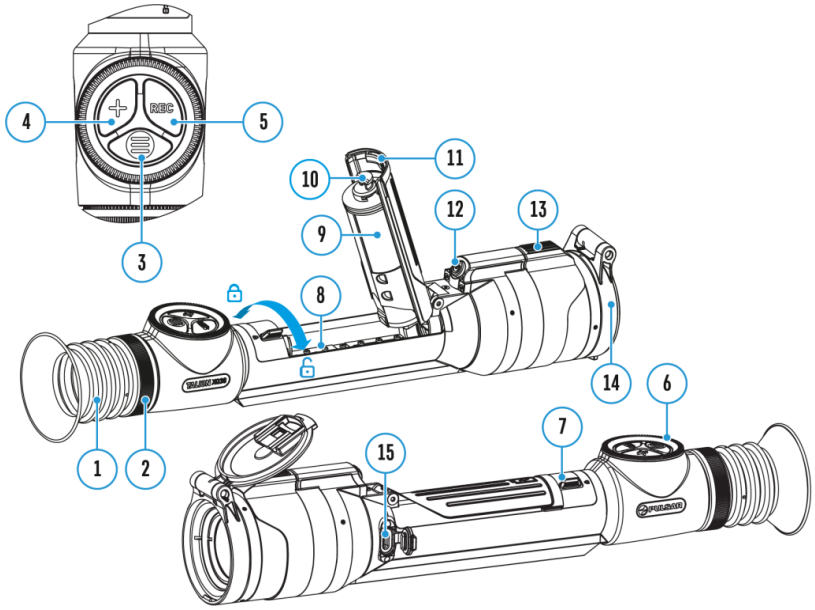
12. To activate the use of weather data in your geolocation during the shot, go to the "Devices" tab → Select your riflescope → "Set outdoor".



In the **Ballistics** section of the main menu, you can configure the following settings of the ballistic calculator:

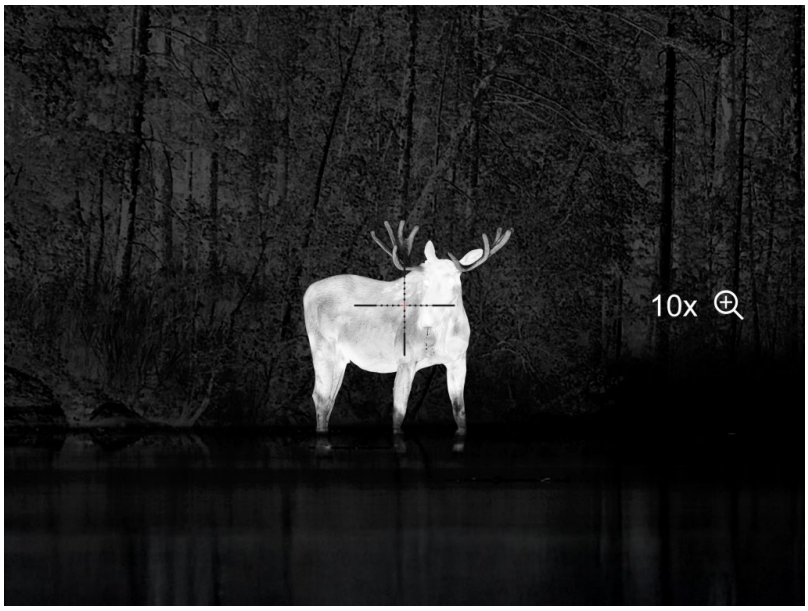
- Screen position of the measured distance value
- Turn on/off the ballistic calculator
- Correction units
- Reticle type and color for suggested point of aiming.

Discrete digital zoom



Discrete digital zoom allows you to quickly increase the basic magnification (see **Magnification** line in the table of **Technical Specifications**) by 2x or 4x, as well as return to the basic magnification.





When **“Zoom activation with button”** function in the **User settings** submenu is on:

- Press the **ZOOM (4)** button successively to change the magnification ratio of the riflescope.
- While the icon is visible on the screen, rotate the controller **(6)** for smooth digital zooming from the current magnification.

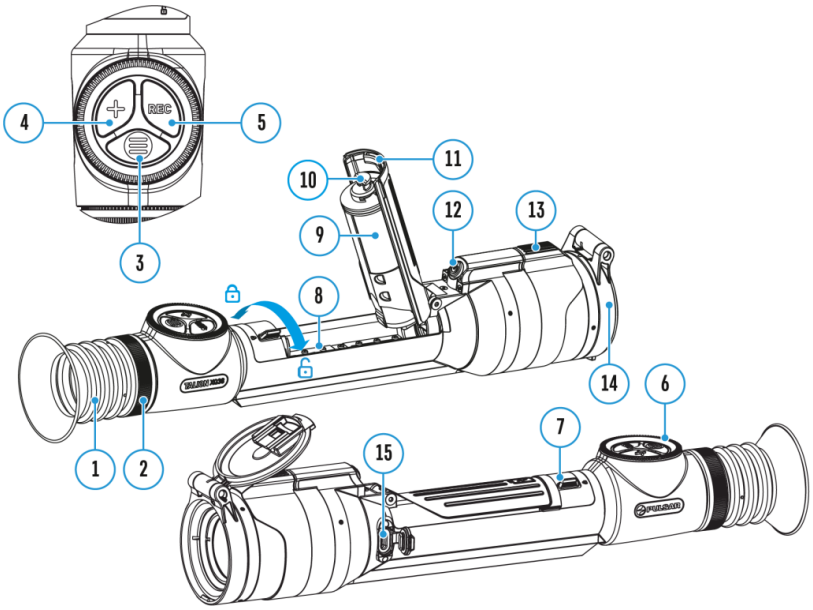
When **“Zoom activation with button”** function is off:

- Rotate the controller **(6)** for smooth digital zooming from the current magnification.
- Press the **ZOOM (4)** button successively to change the magnification ratio of the riflescope. Then, rotate the controller ring for more precise zoom adjustment.

Notes:

- The magnification value is reset to the base value when the device is switched off.
- To save zoom after shutting down the device, activate the function in the **User settings** submenu of the main menu.

PIP function

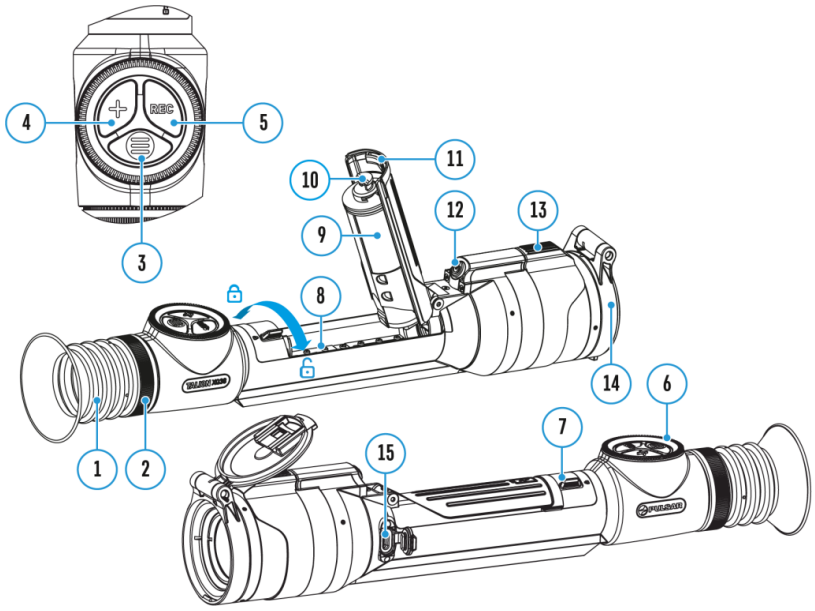


The PiP function (Picture-in-Picture) allows you to see both a magnified image in a particular dialog box and the main image.



1. Press and hold the **ZOOM (4)** button to turn on/off the PiP function.
2. To change the digital zoom in the PiP window, briefly press the **ZOOM (4)** button or rotate the controller **(6)** until the icon is visible on the screen .
3. The magnified image is displayed in a particular dialog box, with the full magnification being used.
4. The rest of the image is displayed only with the optical zoom (digital zoom is off).
5. When PiP is turned off, the display shows the full magnification set for the PiP mode.

Display-Off function

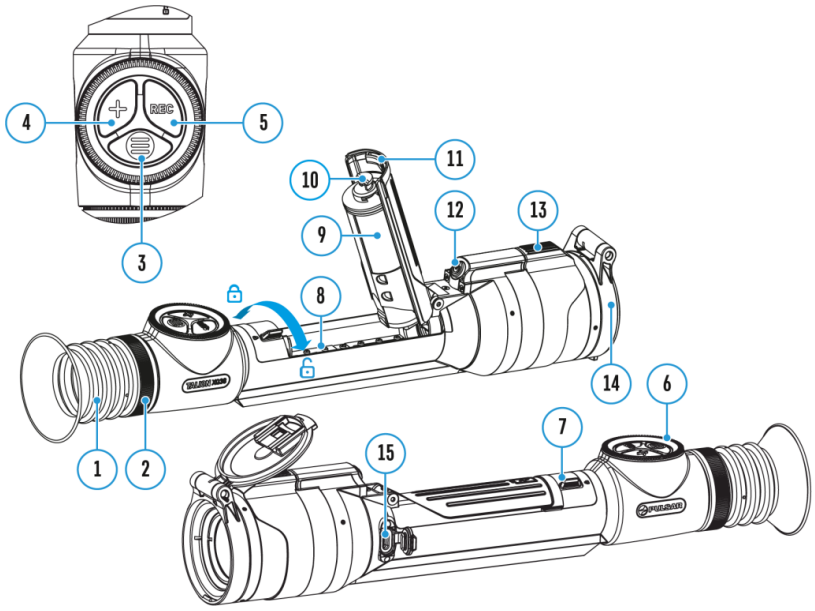


This function darkens the screen, which aids the user's concealment. However, the device stays on.



1. When the device is on, press and hold the **ON/OFF (12)** button for less than 3 seconds. The display will turn off, the current time and the **"Display off"** icon will appear.
2. Press the **ON/OFF (12)** button briefly to turn on the display.
3. When you press and hold the **ON/OFF (12)** button, the display shows the **"Display off"** icon with a countdown. Holding the button down for the duration of the countdown will power the device off completely.

Wi-fi function



The riflescope has a function for wireless communication with mobile devices (smartphone or tablet) via Wi-Fi.

1. To enable the wireless module, enter the main menu by long pressing the **MENU (3)** button.
2. Rotate the controller **(6)** to select the **Wi-Fi Activation** menu item.
3. Press the **MENU (3)** button briefly to turn on/off the Wi-Fi module.

Wi-Fi is displayed in the status bar as follows:

Indication in the Status Bar	**Connection Status**
	Wi-Fi is switched off
	Wi-Fi is switched on by the user, Wi-Fi connection in the riflescope is in progress.
	Wi-Fi is switched on, there is no connection to the riflescope
	Wi-Fi is switched on, there is connection to the riflescope

- An external device recognizes the riflescope under the name Talion_XXXX, where XXXX are the four last digits of the serial number.
- After entering the password on a mobile device (see **Password Setup** subsection of the **Wi-Fi Settings** section for more information on setting a password) and setting up a connection, the icon in the riflescope status bar changes to .
- The Wi-Fi function will turn off automatically if there is not enough battery power for Wi-Fi. To use the Wi-Fi function again, you need to charge the battery.

Scalable reticles

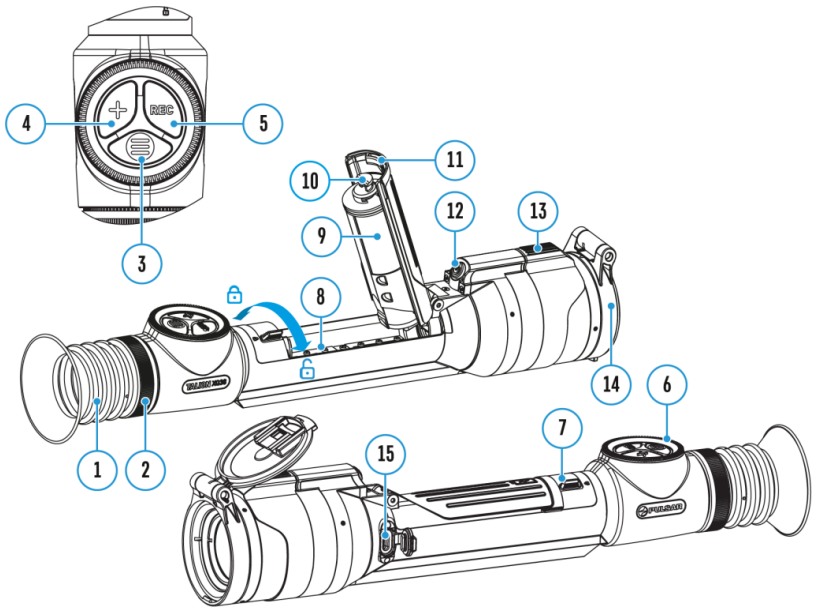
This function is designed to preserve ballistic properties of the scalable reticles X51Fi-300, M56Fi, M57Fi for all magnifications.

1. Enter the main menu with a long press of the **MENU (3)** button.
2. Enter submenu **Reticle & zeroing** → Reticle Type .
3. Select the reticle X51Fi-300, M56Fi, M57Fi.

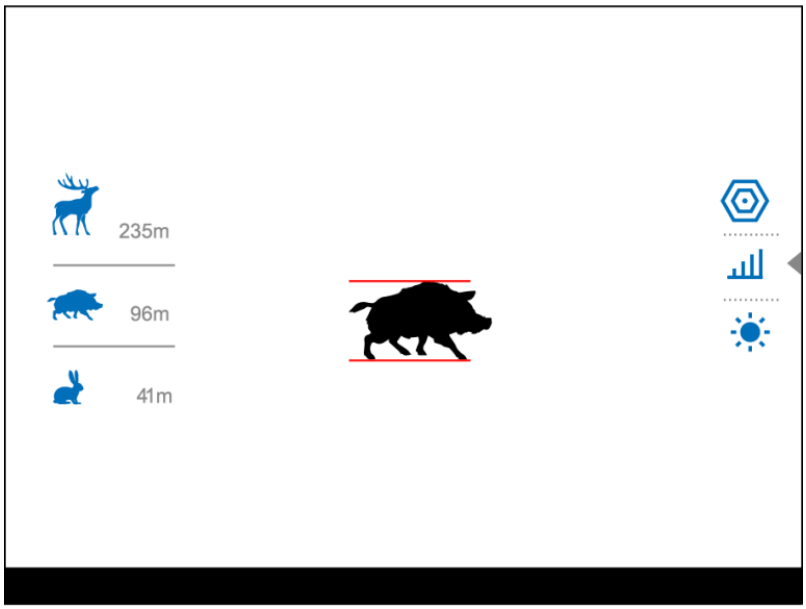
Notes:

- When zooming in and out the image, the selected reticle on the display and in the recorded video changes its geometrical size according to the magnification selected.
- The reticle scale changes both on the main display and in the PiP mode.

Stadiametric rangefinder



Thermal imaging riflescopes are equipped with a stadiametric rangefinder, which allows you to determine the approximate distance to an object, if its size is known.



1. To select the **Stadiametric Rangefinder** function, enter the **Quick Menu** by briefly pressing the **MENU (3)** button.
2. Press the **MENU (3)** button briefly to select the icon .
3. The display will show the lines for measurements, the icons and numbers of the measured distance for three objects.
4. Place the bottom fixed line under the object.
5. Rotate the controller **(6)** to move the upper line relative to the lower horizontal fixed line so that the object is located directly between the lines. A target range automatically recalculated along with movement.
6. To exit the rangefinder mode, briefly press the **MENU (3)** button or wait 10 seconds to exit automatically.

Notes:

- There are three predefined values for objects: Hare – 0.3 m high, Boar – 0.7 m high, Deer – 1.7 m high.
- The measured range value is rounded off before being displayed – for large range values up to 5 m, for shorter range – up to 1 m.
- To select a unit of measurement (meters or yards), go to the General Settings menu item ⇒ **Units of Measure** submenu.

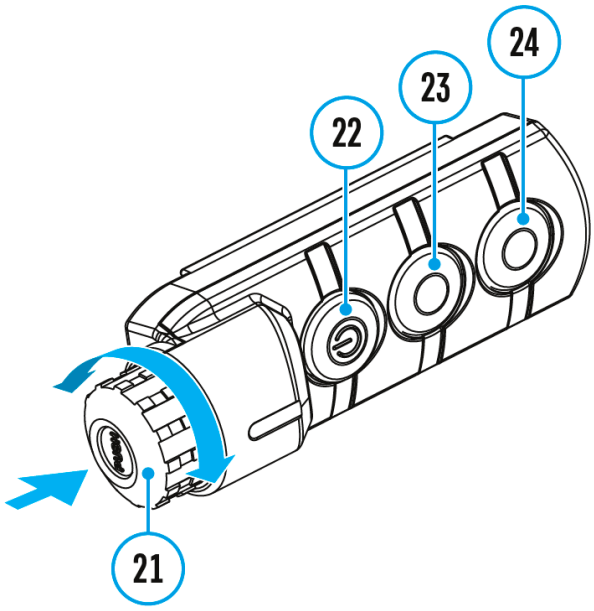
Wireless Remote Control

Description of controls

The wireless remote control duplicates the functions of turning off the device, turning off the display, calibration, digital zoom, taking photos, video recording, and it allows

navigation through the menu.

Attention! The adhesive layer of the remote control mounting tape is intended for metal, glass, and most plastics. On wooden surfaces with coatings (varnish, oil, etc.), removal may cause damage. Use on such materials is not recommended.



(21) Controller

- **Short press:** Enter the Quick menu and submenus of the main menu / Confirm selection / Switch to the next item of the Quick menu
- **Long press:** Enter/exit the main menu / Exit the Quick menu
- **Double press:** Disable SPOA of **ballistic calculator**
- **Rotate clockwise:**
  - Quick menu – Increase parameter
  - Main menu – Navigate down
- **Rotate counter-clockwise:**
  - Quick menu – Decrease parameter

- Main menu – Navigate up

(22) ON/OFF button

- **Short press:** Turn the display on / Calibrate the microbolometer
- **Long press:** Turn the display off / Turn the device off

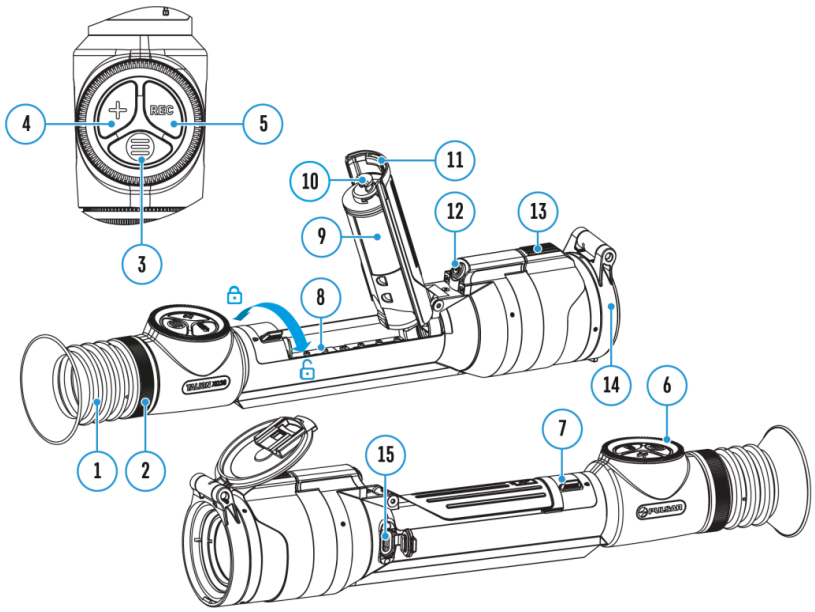
(23) ZOOM button

- **Short press:** Control discrete digital zoom
- **Long press:** PiP on/off

(24) PHOTO/VIDEO button

- **Short press:** Start video recording / Capture a photo
- **Long press:** Switch to photo/video mode

Remote control activation



1. Turn on the Bluetooth module (see the **Bluetooth** section).
2. In the **Bluetooth** section of the menu, rotate the controller **(6)** to select the **Find accessory or device** menu item.
3. Confirm your selection with a short press of the **MENU (3)** button.
4. Press and hold any button on the Remote Control. The Remote Control is visible in the Bluetooth network and can be connected during this time.

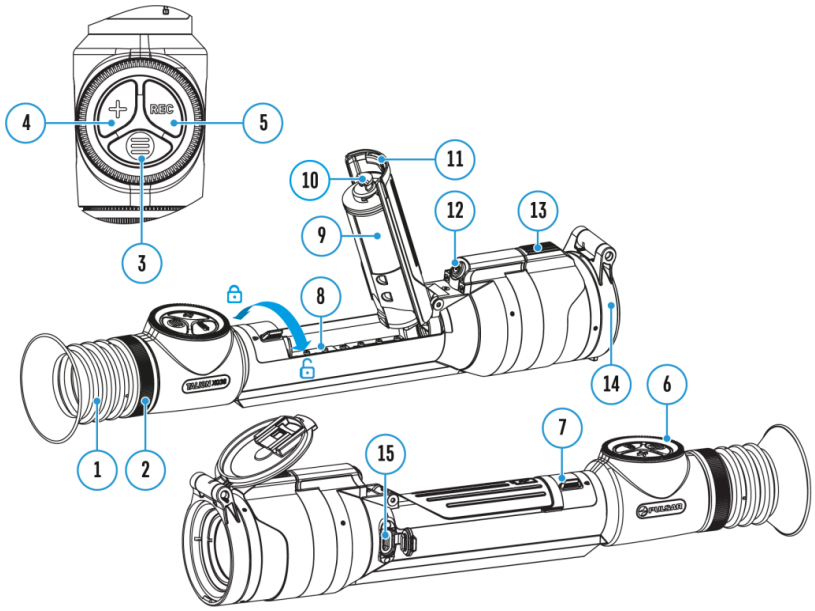
5. Rotate the controller **(6)** to select the remote control from the dropdown list that appears.
6. Confirm your selection with a short press of the **MENU (3)** button.

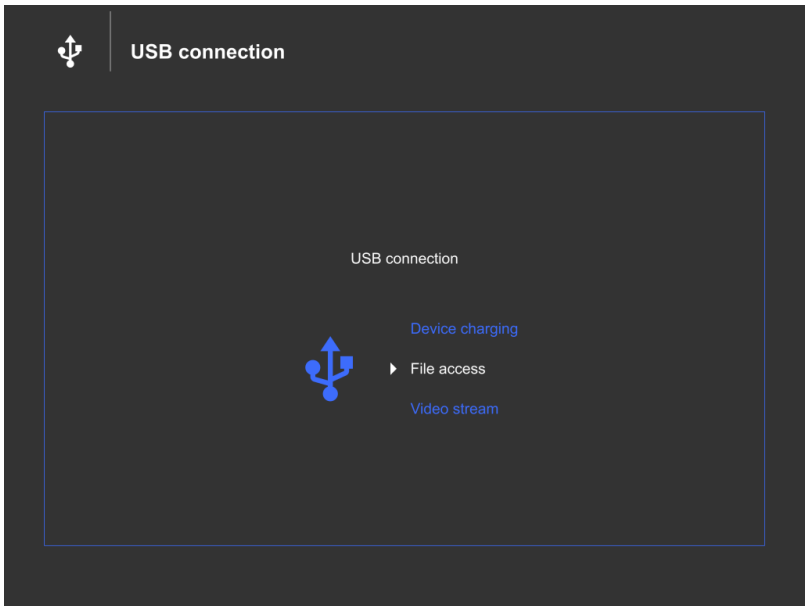
Notes:

- Once paired, the Remote Control can operate the Pulsar device.

- Going forward, the Remote Control will automatically connect to the paired device when within visible range.
- The name of the remote control and its battery charge level will appear in the list of paired devices at the bottom of the display in the **Bluetooth** section of the menu.

USB connection





1. Press the **ON/OFF (12)** button briefly to power the riflescope on (the computer will not detect the riflescope if it is turned off).
2. Connect one end of the USB cable to the USB Type-C **(15)** connector of the riflescope, the other one to the port on your computer using a USB Type-A adapter.
3. The riflescope is detected by the computer automatically and no installation of drivers is required.
4. After a few seconds, three connection options appear on the display: **Device charging, File access (external memory)** and **Video stream.**
5. Rotate the controller **(6)** to select the connection mode.
6. Press the **MENU (3)** button briefly to confirm your selection.

Device charging

- In this mode, a PC/laptop is used as an external power supply. The device continues operating and all functions are available.
- Battery recharge feasibility depends on your computer's USB port.
- When the USB is disconnected from the device when in the **Device charging** mode, the device keeps operating with the Battery Pack if it is available and sufficiently charged.

File access

- In this mode the device is detected by the computer as a flash card. This mode is designed for work with the files saved in the device's memory. The device's functions are not available in this mode; the device turns off automatically.
- If video recording was in progress when the connection was made, recording stops and the video is saved.
- If the device is in **File access** mode and is disconnected from USB, the device will remain on.

Video stream

The device can be connected to PC or smartphone via USB Type-C cable.

The device is recognized as a web camera and accessed via any app that can work with web cameras. Signal from USB has better quality and latency and can be recorded or edited with software on the connected device.

During the video stream it is possible to record the observed picture. Activation of video recording is only available from the device itself by briefly pressing the **REC (5)** button.

NOTE! Feature is supported only with iPhones that have USB Type-C port.

To view the video stream, use any application (on desktop or mobile platforms) that supports the UVC video standard.

Image transfer latency may occur in some applications. To reduce latency, disable the buffer in the application settings.

Software

Stream vision 2



Install the Stream Vision 2 application to download files, update firmware, control the device by remote control and broadcast images from your device to a smartphone or a tablet via WiFi.

We recommend using the latest version – Stream Vision 2.

Mobile App
STREAM VISION 2

You can find further guidelines on Stream Vision 2 **here.**

Download from Google Play

Download from App Store

Find answers to frequently asked questions about using Stream Vision 2 **here**.

Firmware update

- Download the free Stream Vision 2 App in **Google Play** or the **App Store**.
- Connect your Pulsar device to your mobile device (smartphone or tablet).
- Launch Stream Vision 2 and go to section “Settings”.
- Select your Pulsar device and press “Check firmware update”.
- Wait for the update to download and install. Pulsar device will reboot and will be ready to operate.

Important:

- if your Pulsar device is connected to a phone or mobile device, please turn on mobile data transfer (GPRS/3G/4G) to download the latest firmware update;
- if your Pulsar device is not connected to your phone or mobile device but is already listed under “My devices” in “Settings”, you may use Wi-Fi to download the latest firmware update.

Find answers to frequently asked questions about using Stream Vision 2 **here**.

Is your firmware up to date?

Click **here** to check the latest firmware for your device.

Maintenance

Technical inspection

It is recommended to inspect your riflescope before each use. Check the following:

- The device should be free of any cracks or deformations.
- The lenses should be free of cracks, grease, dirt or debris.
- The battery level of the device should be full. Electrical sockets should be free of salts, oxidation, or other debris.
- All controls should be responsive.

Technical maintenance

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

- Wipe the exterior surfaces of metal and plastic parts with a cotton cloth. Do not use chemically active substances, solvents, etc. as these will damage the paint.
- Clean the electric contacts of the battery pack and battery slots on the riflescope using a non-greasy organic solvent.
- Recharge the battery if necessary (50%-80% is recommended for normal use).
- Check the lenses of the eyepiece and objective. If necessary, remove dust and sand from the optics (it is preferable to use a non-contact method). Cleaning of the exterior surfaces of the optics should be done with cleaners designed especially for this purpose.
- Avoid getting repellent on the housing of the device. This may damage the appearance of the housing coating.

Troubleshooting

For technical assistance, please submit a request through our Support page.

The device does not turn on

Possible cause
The Battery Pack is empty
Solution
Charge the Battery Pack

Device malfunction

Solution
In case of any malfunctions during operation, try resetting the device by long pressing the ON/OFF button for 10 seconds.

The device does not operate from an external power source

Possible cause
USB cable is damaged.

Solution
Replace USB cable.

Possible cause
The external power supply is discharged.
Solution
Charge the external power supply.

The image is fuzzy. There are distortions in the form of bars of different widths lying in different directions, or dots of different size and brightness.

Possible cause
Calibration is required.
Solution
Perform image calibration according to **Calibration Mode** section.

Black screen after calibration

Solution
If the image does not clear after calibration, you need to recalibrate.

When the device is turned on, the calibration frequency is at first higher, then

decreases (if the automatic calibration mode is enabled)

Possible cause
After turning on the device, it takes some time for the sensor temperature to stabilize. This is normal and is not a defect.

The reticle is blurred and cannot be focused with the dioptre ring

Possible cause
The dioptre adjustment range is not enough for your eyesight.
Solution
If you wear glasses with a range of -3/+4, keep glasses on when looking through the eyepiece.

Coloured lines appeared on display or image has disappeared

Possible cause
The device was exposed to static electricity during operation.
Solution
After exposure to static electricity, the device may either reboot automatically, or require turning off and on again.

The image is too dark

Possible cause
Brightness or contrast level is too low.

Solution
Adjust the brightness or contrast in the Quick Menu.

The reticle is crisp but an object at least 30 m away is blurry

Possible cause
Dust and condensation are covering the outside or inside optical surfaces.
Solution
Wipe the outer surface of the objective lens with a soft cotton cloth. Dry the riflescope. Let it stand for four hours in a warm room.

Possible cause
The lens is not focused.
Solution
Adjust the clarity of the picture by rotating the lens focus control.

The point of impact shifts after firing rounds

Possible cause
The riflescope is not mounted securely or the mount was not fixed with thread sealant.

Solution
Check that the riflescope has been securely mounted.
Make sure you are shooting the same cartridge and load as when the weapon was first zeroed.
Be advised that changes in season, time of day and/or changes in temperature may slightly shift your point of impact. Double checking your zero before hunting is recommended.

After zeroing, the aiming reticle moves relative to the centre of the display

Possible cause
After shooting, the aiming reticle may not be in the centre of the display. This is normal and is not a defect.

The riflescope will not focus

Possible cause
Wrong settings.
Solution
Adjust the riflescope according to the **Powering on and Image Setting** section.
Check the outer surfaces of the objective lenses and eyepiece and, where necessary, wipe away dust, condensation, frost, etc. In cold weather, you can use special anti-fogging coatings (e.g., the same as for corrective glasses).

Smartphone or tablet cannot be connected to the device

Possible cause
Password in the riflescope was changed.
Solution
Delete the device from your local network and add it again, using the password saved on your riflescope.

Possible cause
There are too many Wi-Fi networks in the area where the riflescope is located which

may cause signal interference.
Solution
To ensure stable Wi-Fi performance, move the riflescope to an area with few or no Wi-Fi networks.
Solution
Switch the device's Wi-Fi bandwidth.

Possible cause
The device has a 5 GHz network enabled, but the smartphone only supports 2.4 GHz.
Solution
Switch the device's Wi-Fi bandwidth to 2.4 GHz.

More information on solving problems with connection to Stream Vision 2 by following the link.

Wi-Fi signal is missing or interrupted

Possible cause
Smartphone or tablet is out of range of a strong Wi-Fi signal. There are obstacles between the device and the smartphone or tablet (e.g., concrete walls).

Solution
Relocate smartphone or tablet into the Wi-Fi signal line of sight.

More information on solving problems with connection to Stream Vision 2 by following the link.

The image of the object being observed is missing

Possible cause
The object is behind glass, which obstructs thermal vision.
Solution
Remove the glass.

Poor image quality / Reduced detection distance

Possible cause
These problems may occur during observation in adverse weather conditions (snow, rain, fog etc.).

There are several light or black dots (pixels) on riflescope's display or microbolometer

Solution
The presence of dots is caused by peculiarities of microbolometer or display production technology and is not a defect.

When the device is used in low temperature conditions the image quality is worse than in positive temperatures.

Possible cause
In warm climates, objects in the background of a thermal image heat up differently because of thermal conductivity, generating a high temperature contrast and a sharper thermal image.
In cold climates, objects in the background of a thermal image will cool down to roughly