



Merger LRF

Manual

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Description

Merger LRF thermal imaging binoculars are made with the external design of classic daytime binoculars and provide comfortable viewing with both eyes.

Merger LRF binoculars accommodate day and nighttime observations.

Merger LRF provide exceptional image quality even in adverse weather conditions (fog, smog, rain) and beyond obstacles like branches, tall grass, dense foliage, etc. known to hinder target detection.

Merger LRF devices do not require an external light source and are not affected by bright light exposure.

These binoculars are equipped with a precise built-in laser rangefinder capable of measuring distances up to 1000 m accurately (± 1 m).

Merger LRF thermal imaging binoculars are perfectly suited for night hunting, observation, trail orientation, identifying hazards, rescue operations, etc.

To get started, see the sections:

[Battery Charging](#)

[Battery Installation](#)

[Powering on and Image Setting](#)

[Laser Rangefinder](#)

Package Contents

- Merger thermal binocular
- APS3 Battery Pack
- APS battery charger
- Power adapter
- USB Type-C cable with USB Type-A adapter
- USB Type-C - Micro USB Type-B cable
- Carrying case
- Neck strap
- Quick-Start guide
- Lens cloth
- Warranty card
- Tripod adapter

Features

- Microbolometer with a resolution of 640x480 pixels
- AMOLED displays with a resolution of 1024x768
- Classic daytime binocular design
- 8-color display palette
- 3 calibration modes: manual, semi-automatic and automatic
- Long detection distance (up to 1800 m)
- Smooth digital zoom 2.5-20x
- 3 levels of sensitivity enhancement: Normal, High, Ultra
- "Picture-in-Picture" mode
- Built-in laser rangefinder (up to 1000 m)
- Display functions turn off with the proximity sensor
- Defective Pixel Repair function
- Device firmware update using the free Stream Vision 2 App
- Wide operating temperature range -25 °C - +50°C (-13 °F - +122 °F)
- Completely waterproof IPX7
- Tripod mount

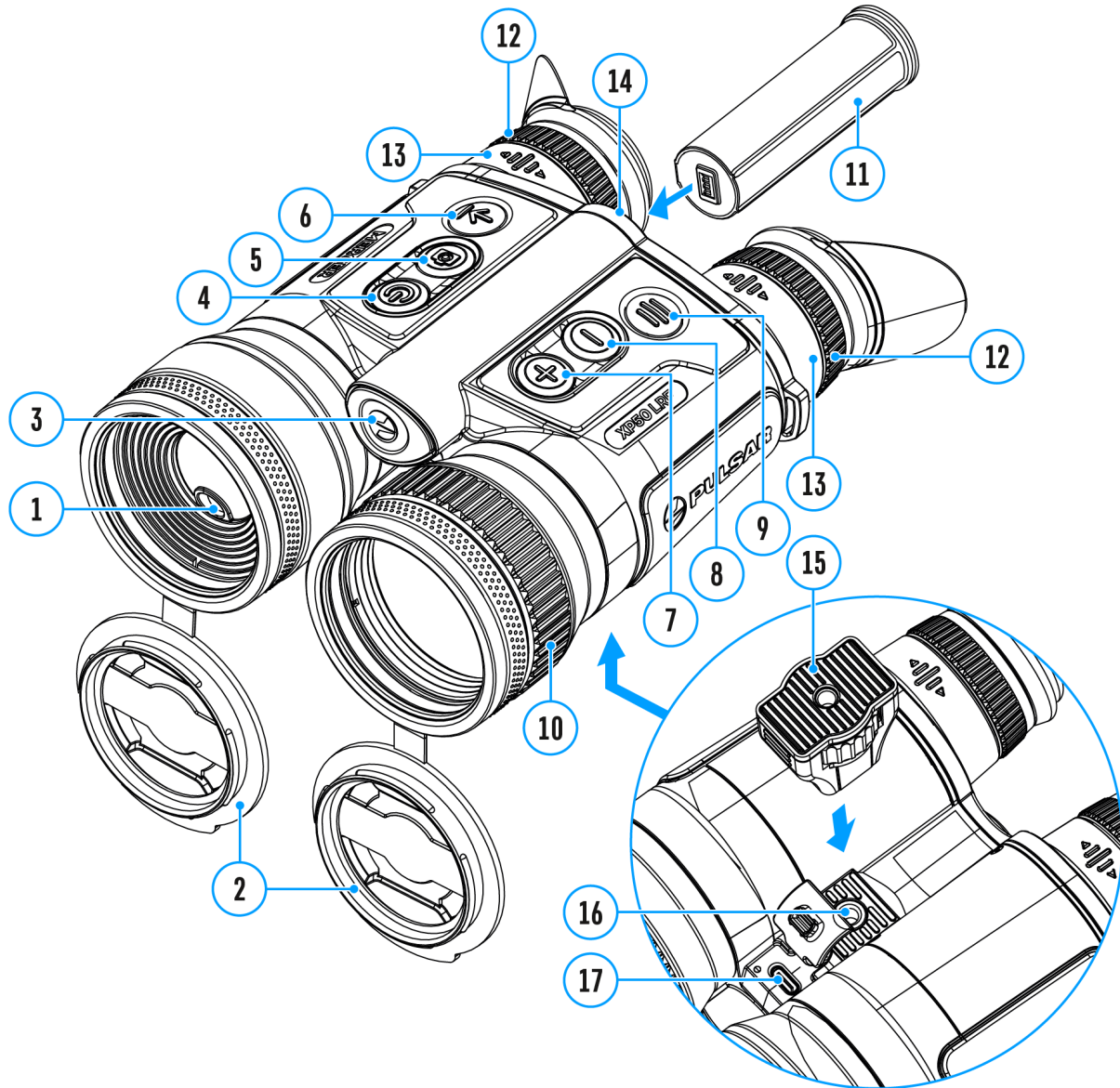
Video/Audio Recording

- Built-in video and sound recorder
- Integration with iOS and Android devices
- Wi-Fi remote control and viewing using a smartphone
- Storing photos and videos in Cloud when using the Stream Vision 2 App

Battery Pack

- Quick Change Li-Ion Battery Pack APS 3
- Charging from USB Power Bank
- Quick-Charge power delivery

Components and Controls



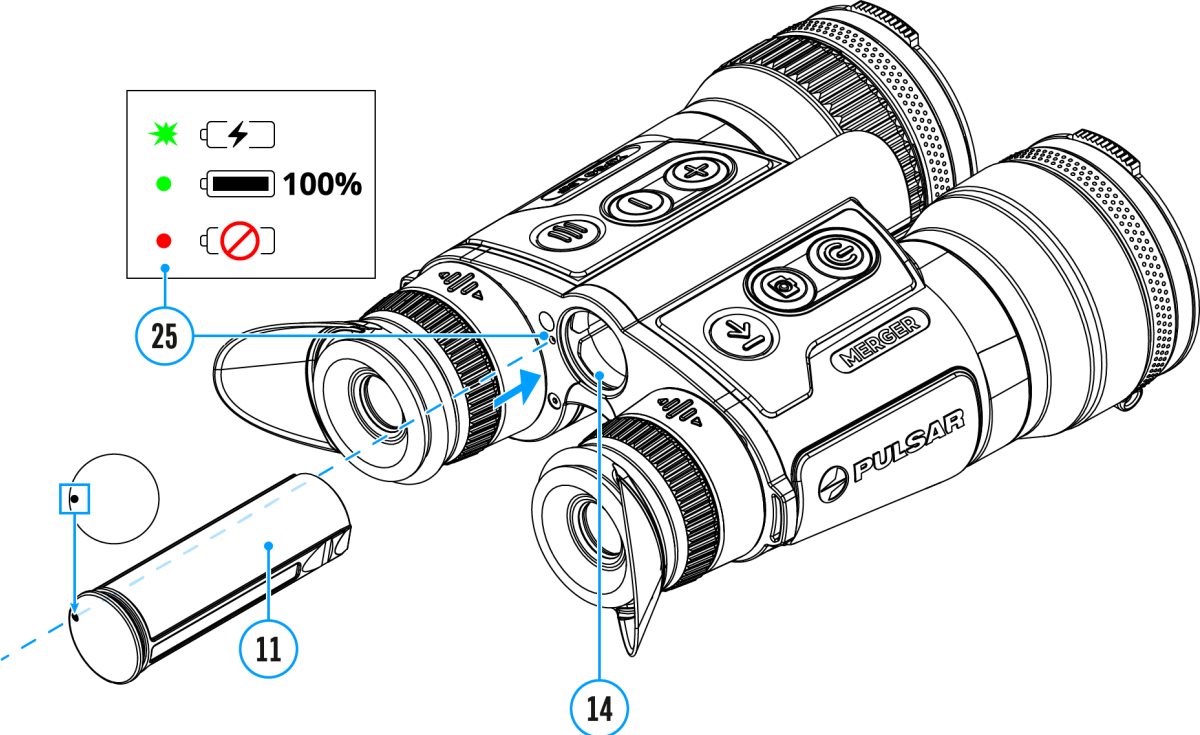
1. Laser rangefinder
2. Removable lens covers
3. Battery release button
4. Power ON/OFF/Calibration button
5. REC button
6. LRF button
7. UP/ZOOM navigation button
8. DOWN navigation button
9. MENU button

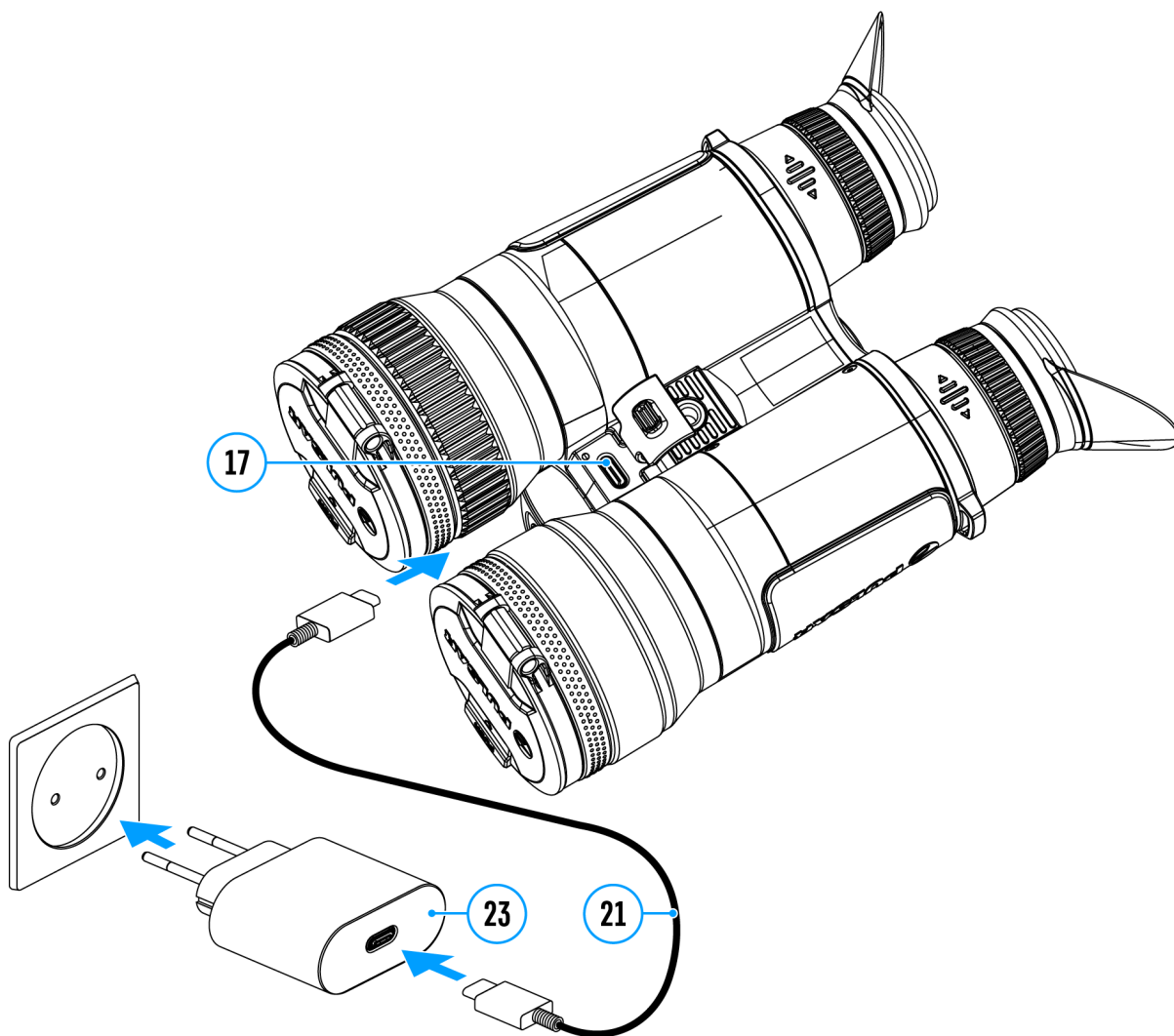
10. Lens focus ring
11. Battery APS 3
12. Eyepiece dioptre rings
13. Eyepieces
14. Battery compartment
15. Tripod adapter
16. Tripod adapter socket
17. USB Type-C port



Battery Charging

Merger LRF binoculars are supplied with a removable and rechargeable APS3 lithium-ion battery pack and a built-in rechargeable lithium-ion battery. The batteries should be charged before first use.

Option 1





1. **Install** the APS 3 battery (**11**) in the battery compartment (**14**) of the device.
2. Connect the USB Type-C cable (**21**) to the USB Type-C connector (**17**) of the device.
3. Connect the other end of the USB cable (**21**) to the Power Adapter (**23**) by removing the USB Type-A adapter.
4. Plug the Power Adapter (**23**) into a 100-240 V socket.
5. Wait until the batteries are fully charged (indication in the status bar: 1  2 ; 1 - built-in battery, 2 - removable battery).

Note: next to the battery compartment (**14**) on the device body there is a light-emitting diode (**25**) to indicate the battery charge level when the device is switched off.

(25) LED indication

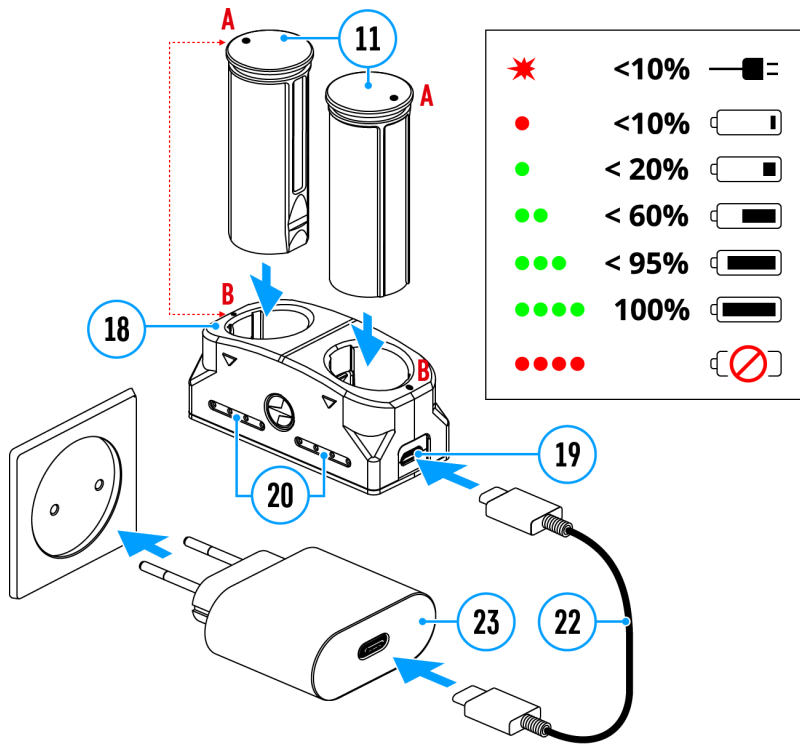
Battery status

•	Batteries are charging
•	Batteries are charged
•	One of the batteries is defective. The device must not be used. The defective battery should be replaced. Contact Pulsar service to replace the internal battery.
-	There is no external battery in the device, or the device is switched on

Attention!When charging rechargeable batteries via a USB Type-C connector **(17)** in the device body section:






- Charging priority is given to the built-in battery.
- When the device is off, both batteries are charged at the same time. When using the device, the external battery is discharged first.
- Built-in and removable batteries support USB Power Delivery fast charging technology when using the USB Type-C cable and power adapter supplied with the device.

Option 2



1. Insert the Battery Pack **(11)** along the rail into the APS charger **(18)** slot as far as it will go. The APS charger is supplied with your device or purchased separately.
2. Point **A** on the battery and point **B** on the charger should match.
3. Connect the Micro USB Type-B plug of the USB cable **(22)** to the port **(19)** of the charger **(18)**.
4. Connect the second plug of the USB cable **(22)** to the USB port on the power adapter **(23)**.
5. Plug the device into a 100-240 V socket.
6. The LED indicator **(20)** will display battery charge status.
7. Wait until the battery is fully charged (LED indication **(20)**: **●●●●**).
8. Two batteries* can be charged at the same time: the second slot is designed for it.

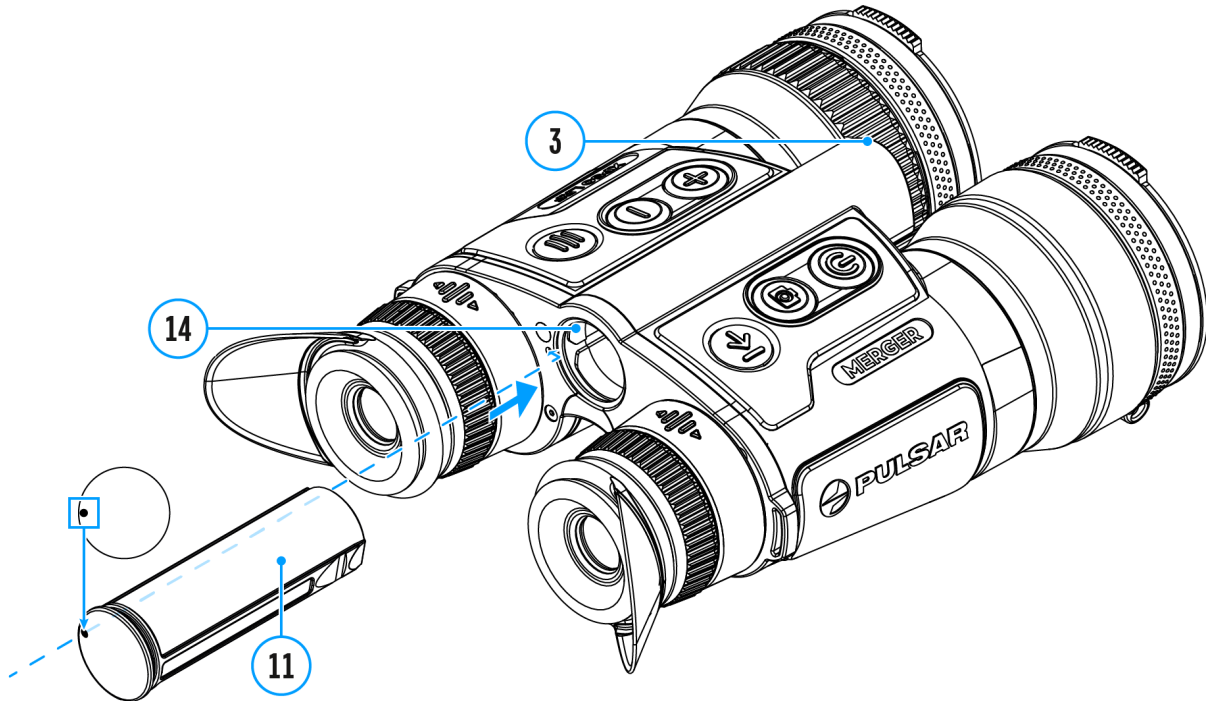
(20) LED Indicator**	Battery Charge Status
●	Battery level is from 0% to 10%. Charger is connected to a power supply.
●	Battery level is from 0% to 10%. Charger is not connected to a power supply.

	Battery level is from 10% to 20%.
	Battery level is from 20% to 60%.
	Battery level is from 60% to 95%.
	The battery is completely charged and can be disconnected from the charger.
	Defective battery. Do not use the battery.

* Purchased separately.

** LED indicator displays the current battery charge status for 30 seconds when the APS charger is not plugged in. When the power is being supplied, the indicator is constantly displaying the current battery charge status, the LEDs are additionally flickering to display the battery charging process.

Battery Installation



1. Install the battery **(11)** into the battery compartment **(14)**. A pictogram in the form of a “dot” on the battery should be on the left.
2. You will hear a click when the battery is placed correctly.
3. To remove the battery from the device, press the Battery Release button **(3)**.


Switching and Changing the Batteries

Merger LRF devices are powered by 2 batteries: built-in Battery Pack and removable Battery Pack APS3.



1. If there are two batteries in the device at the same time, two battery icons are displayed in the status bar (1 - built-in battery, 2 - removable battery). The device battery is displayed in white, inactive - in grey.
 2. When there is no removable battery in the device, only one icon for the built-in battery displays in white in the status bar.
 3. When both batteries are fully charged, the device is powered by the removable battery. If there is low removable battery level, the device will switch to the built-in battery.
 4. Battery charge level is displayed in % above the icon in the status bar while charging.
 5. It is possible to replace removable battery with device turned on when it is powered by built-in battery (the device will continue to work properly).
-

Attention! When installing a removable battery with a sufficient charge level, the device will automatically switch to it.

3. The display will show the battery icon  with charge level as a percentage.
 4. If the device is powered by an external power supply, but the APS3 battery is not connected, only the built-in battery will be charged.
 5. When the external power supply is disconnected, the device switches to the internal battery pack without powering off.
-

Warning! Charging the built-in battery and the APS3 battery from the power bank at an external temperature below 0 °C (32 °F) can reduce the battery life. When using external power, connect the Power Bank to the device after it has been turned on and working for several minutes.

Precautions

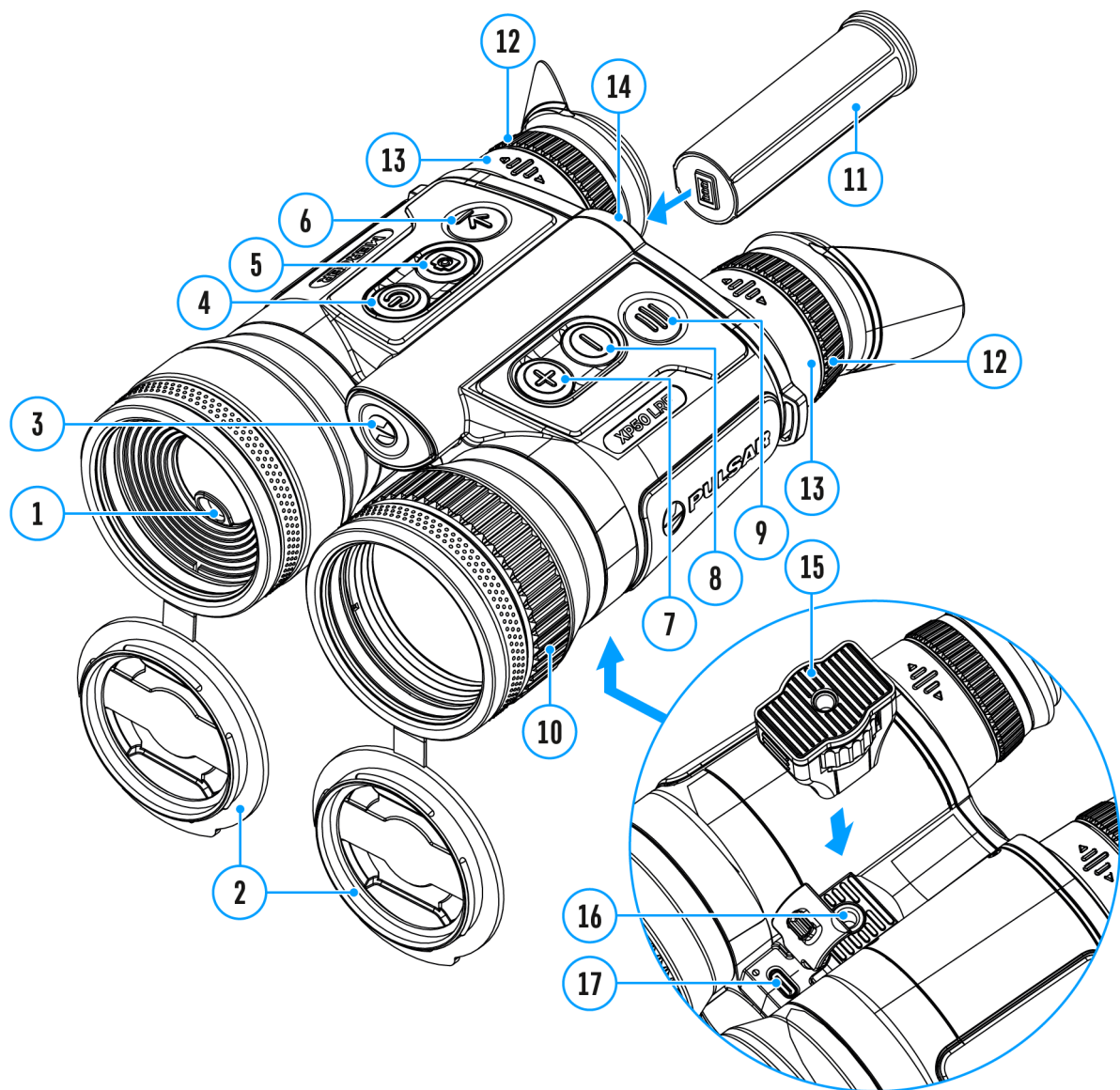
- Only use the charger supplied with the Battery Pack. The use of any other charger may irreparably damage the Battery Pack or the charger and may cause fire.
- Do not charge the built-in and removable batteries immediately after moving the device and batteries from a cold place to a warm place. Wait at least 30 minutes for the device and batteries to warm up.
- 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 batteries to high temperatures or to a naked flame.
- Do not use batteries as a power source for devices that do not support APS batteries.
- Do not disassemble or bend batteries or charger.
- Do not drop or strike batteries or charger.
- Batteries and charger are not designed to be immersed in water.
- Keep the Battery Pack out of the reach of children.

Recommendations for Use

- For long-term storage, the built-in and removable batteries should be partially charged - from 50 to 80%.
- Batteries should be charged at an ambient temperature of 0 °C ... +35 °C. Otherwise, battery life will be significantly reduced.
- When using batteries at sub-zero ambient temperatures, the battery capacity decreases, this is normal and not a defect.
- Do not use batteries at temperatures outside the range of -25 °C ... +50 °C - it may reduce the battery life.
- The battery has a short-circuit protection. Any situation that may cause short-circuiting, however, should be avoided.

Powering on and Image Setting

Show device diagram




















1. Open the lens covers (**2**).
2. Turn the device on with a short press of the **ON/OFF (4)** button.
3. Adjust the interpupillary distance by moving the eyepieces (**13**) farther or closer to each other.

4. Adjust the symbol sharpness on the displays by rotating the eyepiece dioptre rings **(12)**. In future, it will not be necessary to rotate the eyepiece dioptre rings, regardless of the distance and other conditions.
5. To focus on the object being observed rotate the lens focusing ring **(10)**.
6. Select the **calibration mode**: **manual (M)**, **semi-automatic (SA)** or **automatic (A)** in the main menu (enter the menu by long pressing the **MENU (9)** button).
7. Calibrate the image with a short press of the **ON/OFF (4)** button (when calibration mode **(SA)** or **(M)** has been selected). Close the lens cap before manual calibration.
8. Select the required **amplification level** (“Normal”, “High”, “Ultra”) by briefly pressing the **DOWN(8)** button.
9. Adjust the brightness, display contrast, smooth digital zoom in the **quick menu** (activate by briefly pressing the **MENU (9)** button).
10. Press the **LRF (6)** button briefly to start the **rangefinder**. The rangefinder reticle will appear in the center of the image (the rangefinder mark appears in the centre of the image). Briefly press the **LRF (6)** button to measure the distance. Press and hold down the **LRF (6)** button for 2 seconds to measure the distance in scan mode. If the rangefinder is idle longer than for 4 seconds, it turns off automatically.
11. After use, press and hold down the **ON/OFF (4)** button to turn the device off.

Note: To prevent accidental decamouflage of the user, the displays automatically turn off when the observer moves the device away from the face. When the device approaches the face, the displays will automatically turn on.

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 (if the proximity sensor is off)	 long press for less than 3 secs
Turn display on (if the proximity sensor is off)	 short press
Calibrate the microbolometer	 short press
Control discrete digital zoom	 short press
PiP on/off	 long press
Switching amplification levels	 short press
Turn on/off the White Hot palette	 long press
Video Recorder	Button
Start/pause/resume video recording	 short press
Stop video recording	 long press
Switch to video / photo	 long press
Capture Photo	 short press
Main Menu	Button
Enter main menu	 long press
Navigation upwards/rightwards	 short press
Navigation downwards/leftwards	 short press
Confirm selection	 short press

Exit submenu without confirming selection	⊞	long press
Exit menu (switch to viewing mode)	⊞	long press
Quick Menu	Button	
Enter quick menu	⊞	short press
Switch between quick menu options	⊞	short press
Increase value	⊕	short press
Decrease value	⊖	short press
Exit quick menu	⊞	long press
Rangefinder	Button	
Activate rangefinder	→	short press
Measure distance	→	short press
Start/stop SCAN mode	→	long press

Status Bar

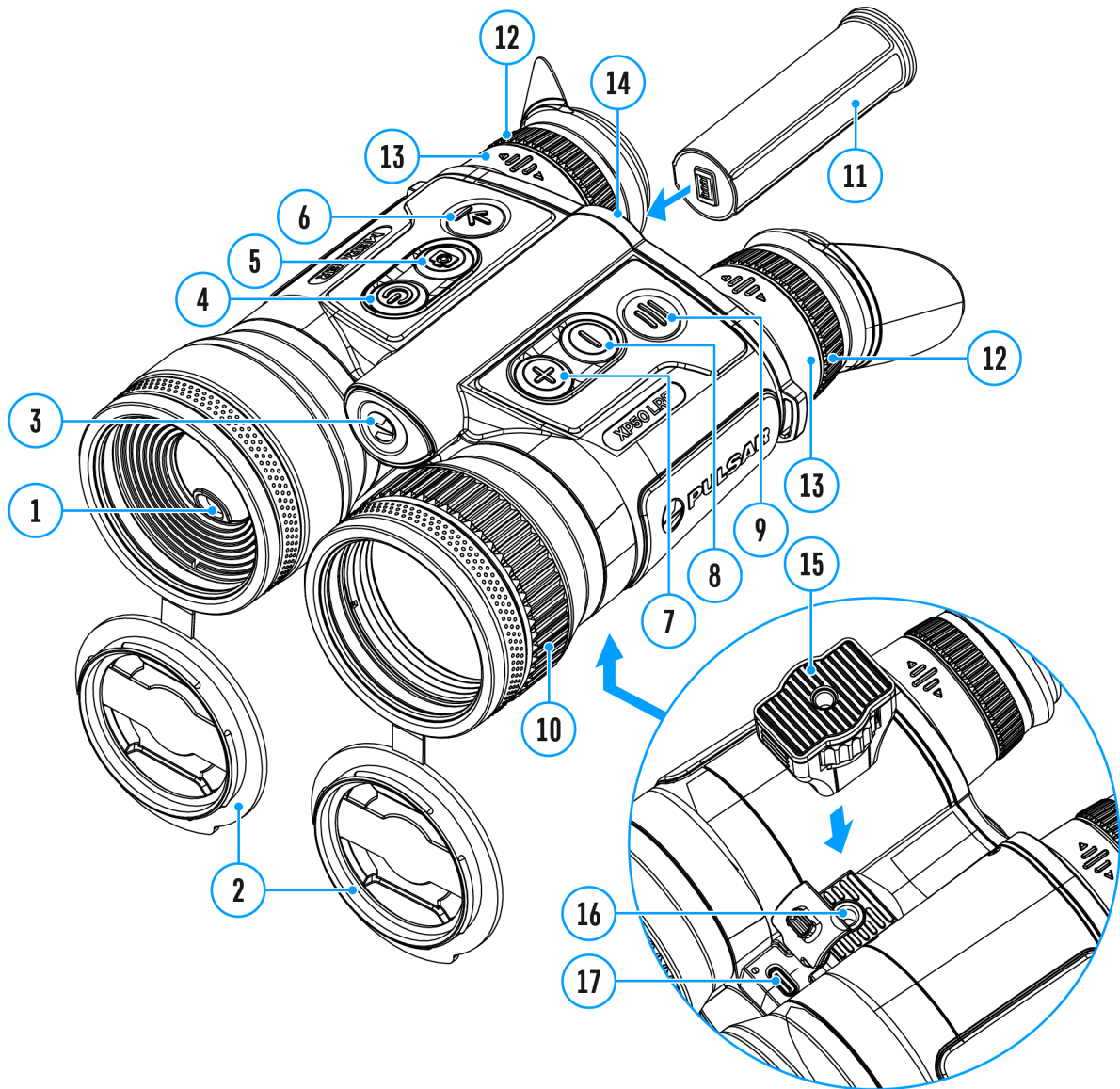


The status bar is at the bottom of the image and shows information on the actual operating status of the device, including:

1. Colour Mode (shown only when the Black Hot color mode is selected)
2. Amplification level (e.g., Normal)
3. Calibration mode (a countdown timer  00:03 will appear instead of the calibration icon when in automatic calibration mode with 3 seconds remaining until automatic calibration)
4. Microphone
5. Current magnification
6. Wi-Fi connection
7. Clock
8. Power supply:
 - Battery discharge level   (when the device is powered by a built-in or removable battery).
 - External battery power indicator  (when the device is powered by an external power supply).
 - Battery indicator  with current percentage of charge (when charging from an external power source).

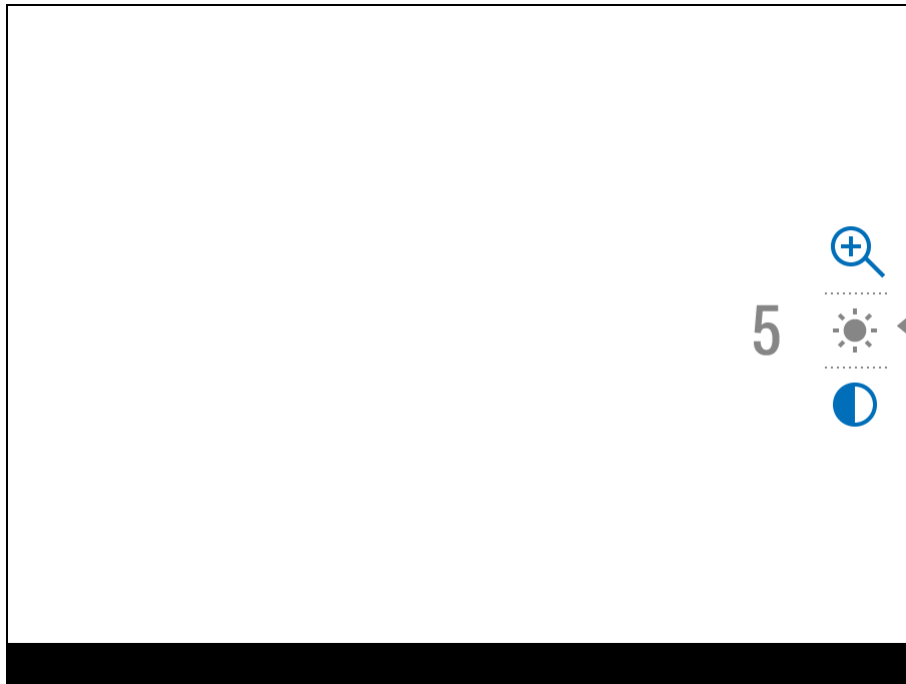
Quick Menu

Show device diagram



The quick menu allows you to access the main device settings, such as adjusting the display brightness and contrast, and smooth digital zoom.

- Enter the menu with a short press of the **MENU (9)** button.
- To toggle between the functions below, press successively the **MENU (9)** button.



Brightness ☀️ - press briefly the **UP (7)/DOWN (8)** buttons to change display brightness from 0 to 20.

Contrast ◐ - press briefly the **UP (7)/DOWN (8)** buttons to change display contrast from 0 to 20.

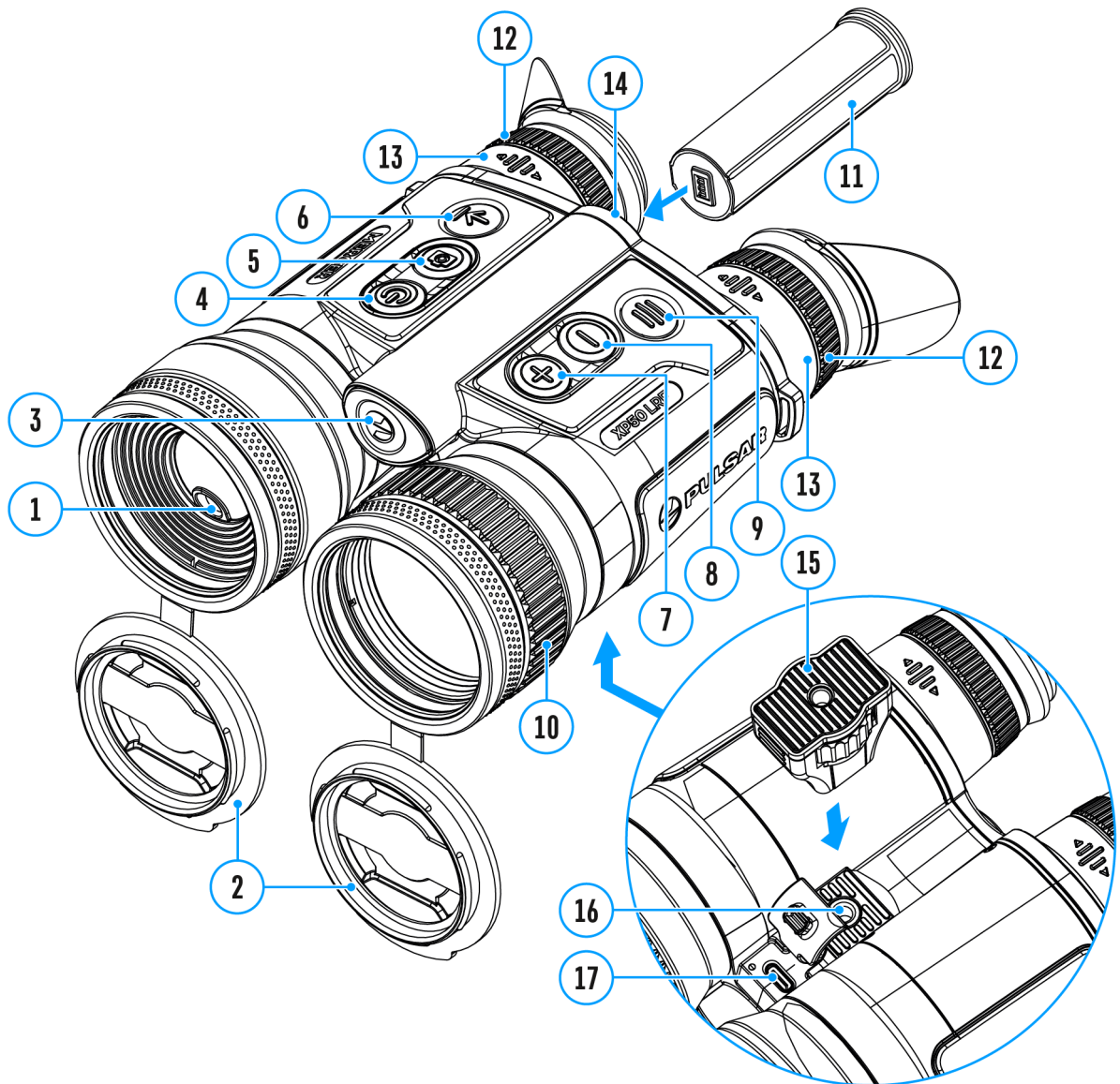
Smooth digital zoom 🔍⁺ - press the **UP (7)/DOWN (8)** buttons to change digital zoom from 2.5 to 20.

Smooth digital zoom is in 0.1x increments.

- To exit quick menu, press and hold down the **MENU (9)** button or wait 5 sec for automatic exit.

Video Recording and Photography

Show device diagram





Merger LRF thermal imaging binoculars feature video recording and photography of the image being ranged to the internal memory card.

Before using the photo and video functions, read the **Date and Time**

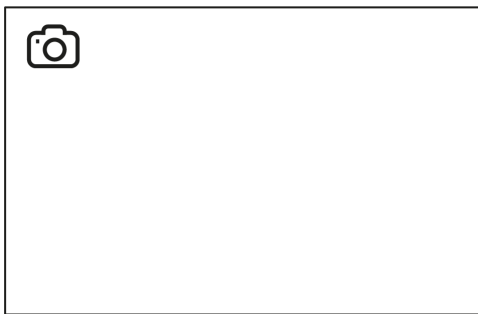
subsections of the **General Settings** section.


Built-in recorder operates in two modes:

- **Photo** (photography; the icon  is displayed in the upper left corner of the image).
- **Video** (video recording; the icon  is displayed in the upper left corner of the image, the total remaining recording time is given taking into account the current resolution in the HH:MM format (hours:minutes).

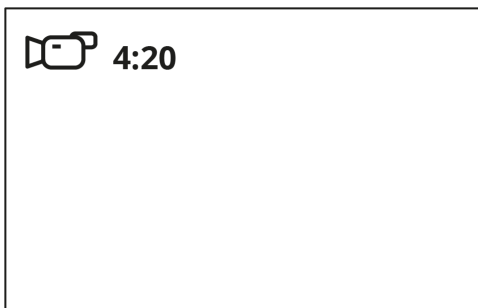
Switching between the operating modes of the video recorder is done by long pressing the **REC (5)** button. Switching between the modes is cyclical (**Video**-> **Photo**-> **Video...**).


Photo mode. Capturing an image

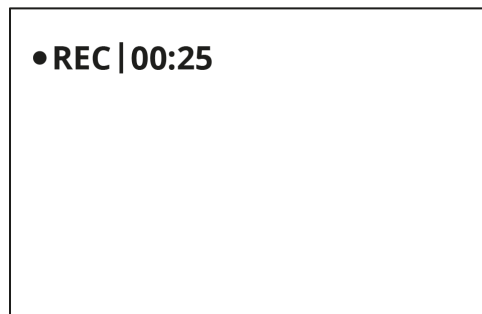


1. Switch to the **Photomode** with a long press of the **REC (5)** button.
 2. Press the **REC (5)** button briefly to capture a photo. The icon  flashes - the photo file is being saved to the built-in SD card.
-

Video mode. Recording a video



1. Switch to the **Video** mode with a long press of the **REC (5)** button.
2. Press the **REC (5)** button briefly to start video recording.
3. When the video recording starts, the icon  will disappear, instead of it the **REC** icon as well as the video recording timer displayed in the MM:SS (minutes:seconds) format will appear ●REC | 00:25.



4. Pause/continue recording by briefly pressing the **REC (5)** button.
5. Press and hold the **REC (5)** button to stop video recording.

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

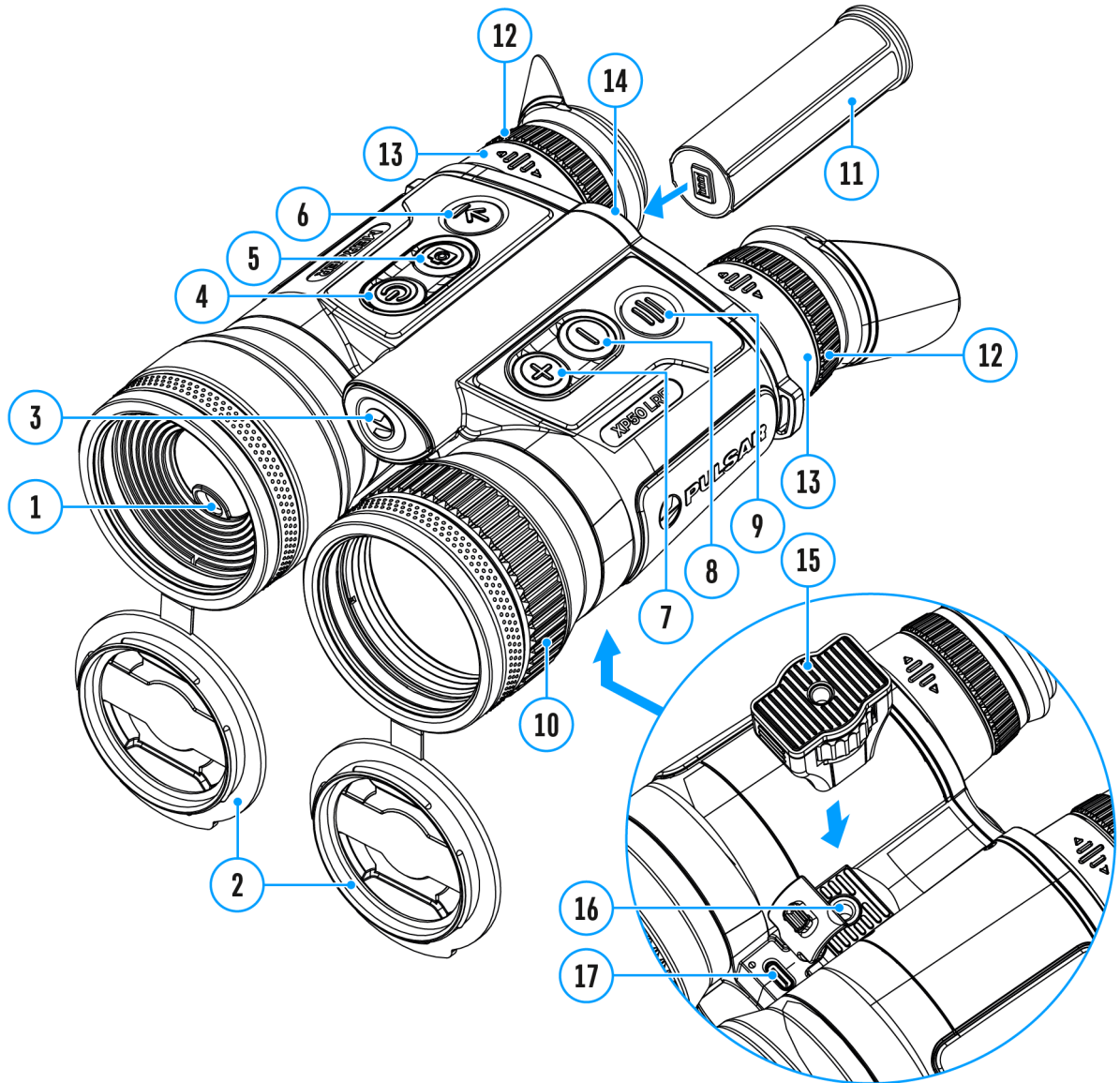
- After turning off the video recording;
- Upon powering the riflescope off if recording was on;
- When the memory card is overfilled during recording (Memory Full message appears).

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).
- Maximum duration of a recorded video file is 5 minutes. After this time expires, the video is recorded to a new file. 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.

Amplification Level

Show device diagram

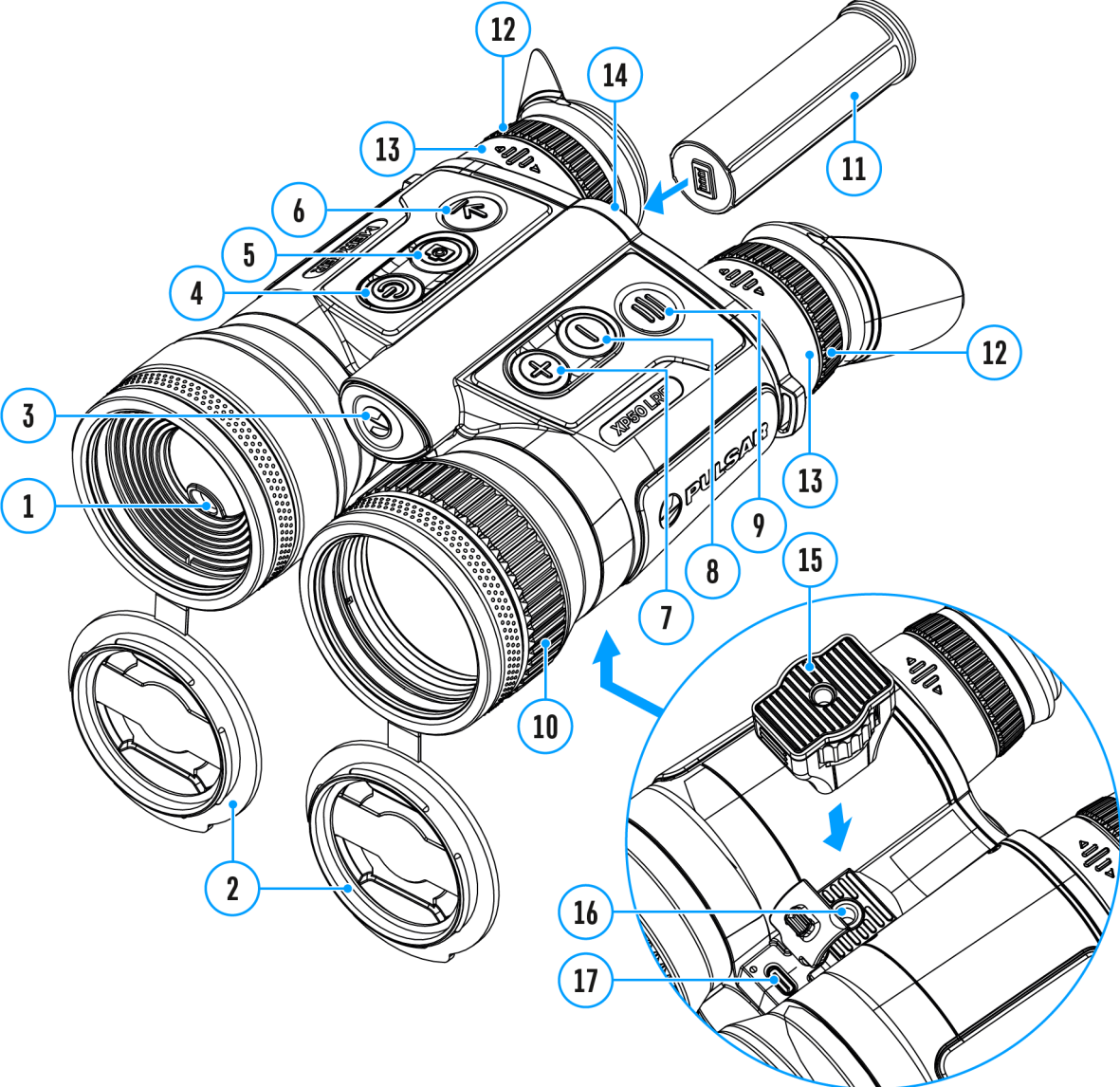


Sensitivity enhancement levels (Normal **N** >>>, High **H** >>>, Ultra **U** >>>) are software algorithms that enhance the quality of detection and recognition in various observation conditions. When the temperature contrast decreases (fog, precipitation, high humidity), it is recommended to increase the amplification level.

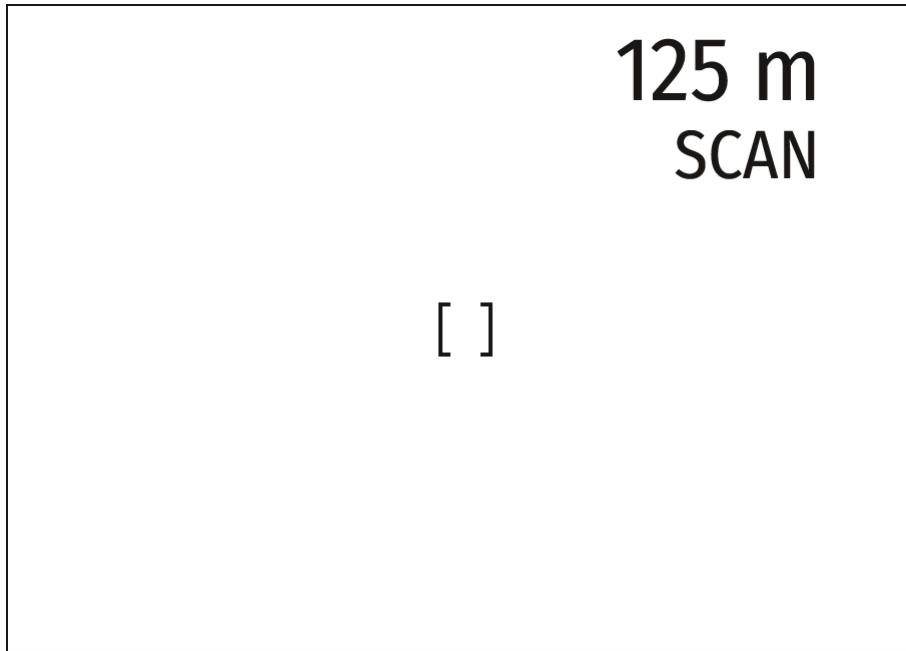
Press the **DOWN (8)** button briefly to switch the amplification level.

Laser Rangefinder

Show device diagram



The binoculars are equipped with a built-in rangefinder **(1)**, allowing you to measure distance to objects up to 1000m away.



Single Measurement Mode

1. Turn on the device, set up image according to section **Powering on and Image Setting**.
2. When briefly pressing the **LRF (6)** button – the rangefinder mark will appear on the screen, empty blanks of range values with the unit of range measurement will appear in the upper right corner of the image, i.e. the rangefinder module switches into measurement standby mode. ----m
3. If PiP mode is activated, the aiming reticle disappears upon activation of the rangefinder and the PiP window remains active.
4. Point the rangefinding reticle at an object and press the **LRF (6)** button.
5. In the top right corner of the display you will see distance in meters (or yards - depending on settings). 7m


Note: if the rangefinder is idle longer than for 4 seconds, it turns off automatically.

Scan Mode

1. To measure distance in scanning mode, hold down the **LRF (6)** button for longer than two seconds. Measurement readings will be changing in real time as you point the binoculars at different objects. A **SCAN** message will appear in the upper right corner of the image.

2. To exit **SCAN** mode, press **LRF (6)** button again.
 3. If measurement fails, dashes will appear on the display.
 4. In 4 seconds of inactivity (no measurement is taken) the rangefinder turns off, the rangefinding reticle with readings disappears from the display.
-

Notes:

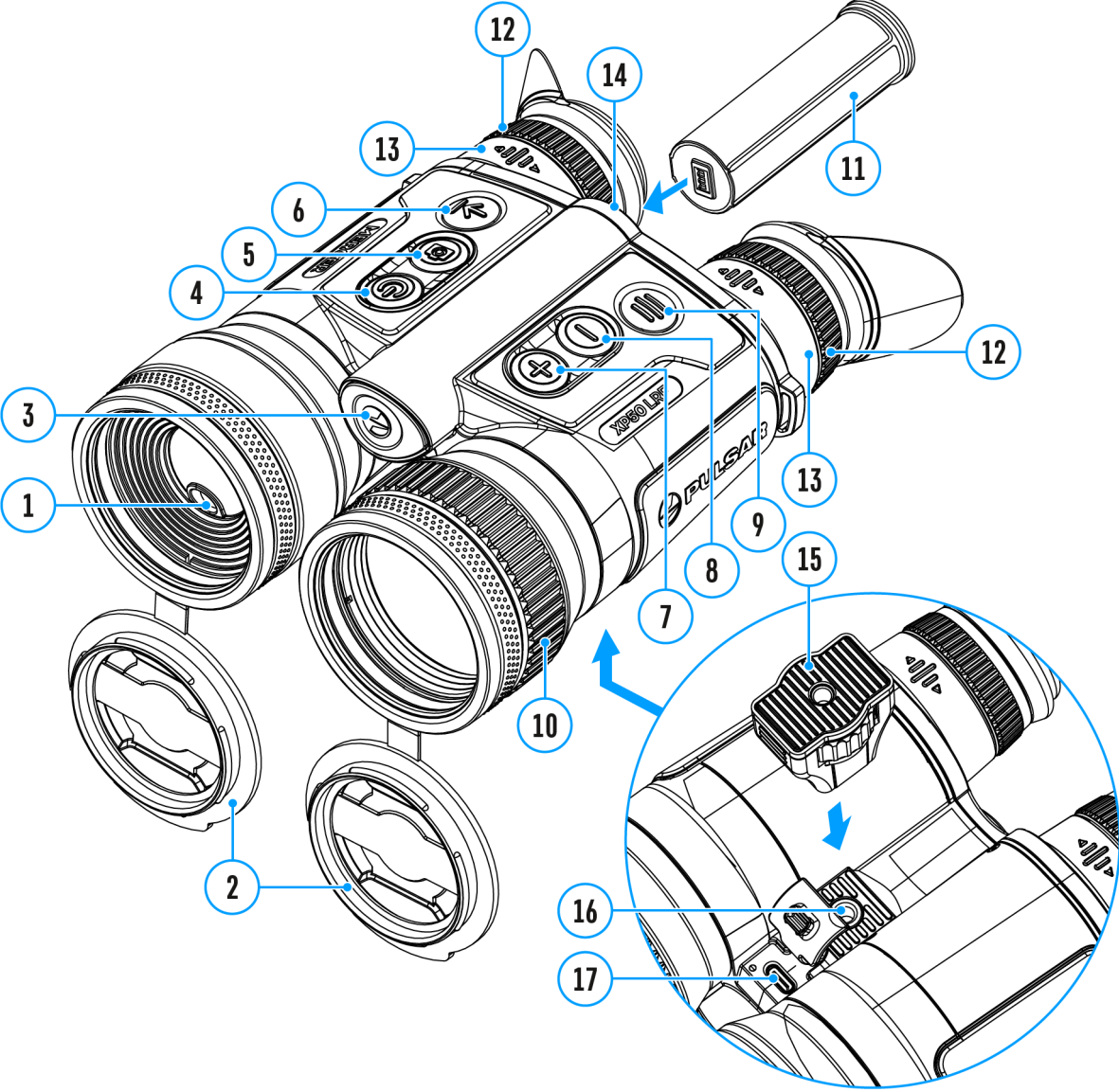
- To select a rangefinding reticle, please see the **Reticle Type** subsection in the **Rangefinder** section.
 - To select a unit of measurement (meters or yards) go to the **Units of Measure**  subsection of the **General Settings** section.
-

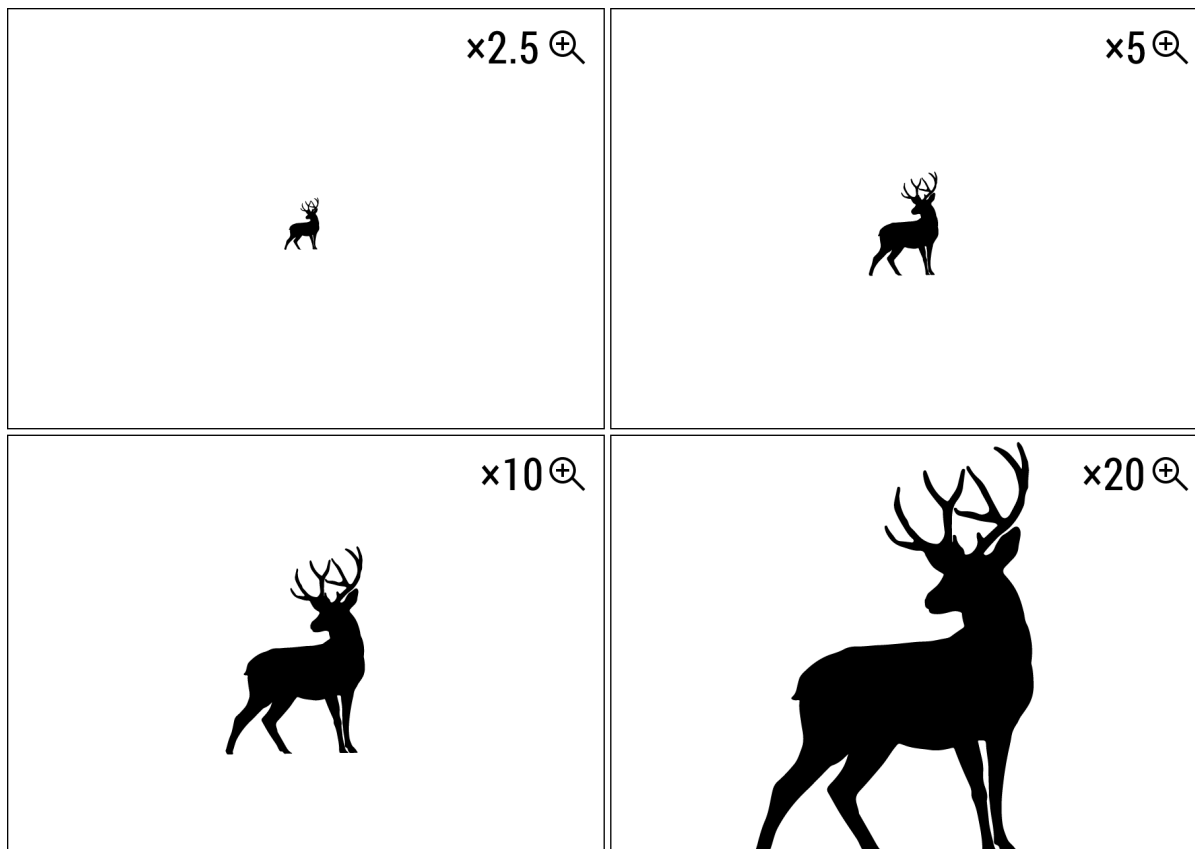
Additional Information:

- Accuracy of measurement and maximum range depend on the reflection ratio of the target surface, the angle at which the emitting beam falls on the target surface and environmental conditions. Reflectivity is also affected by surface texture, color, size and shape of the target. A shiny or brightly colored surface is normally more reflective than a dark surface.
- Measuring range to a small sized target is more difficult than to a large sized target.
- Accuracy of measurement can also be affected by light conditions, fog, haze, rain, snow etc. Ranging performance can degrade in bright conditions or when ranging towards the sun.

Discrete Digital Zoom

Show device diagram



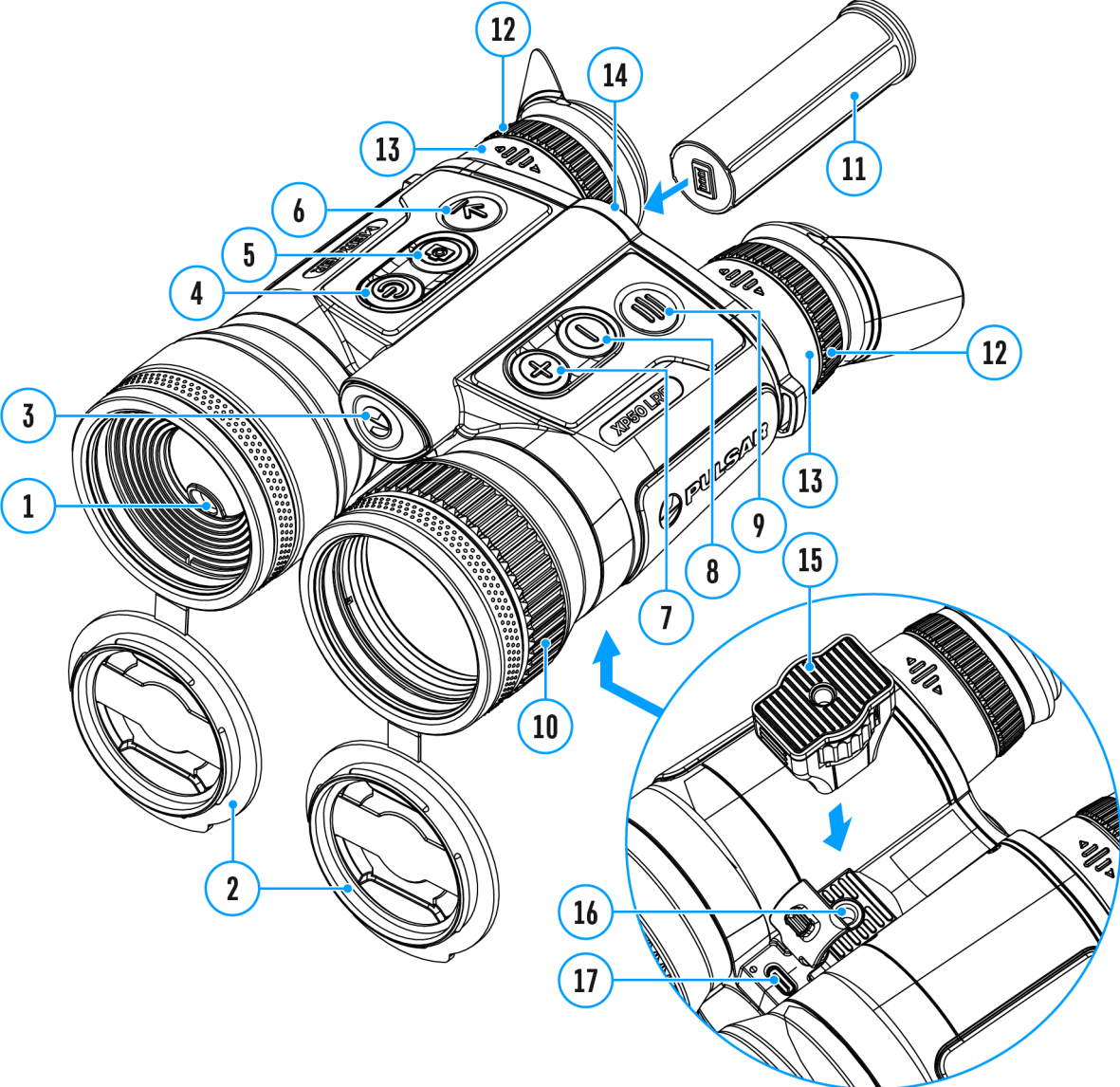


The device allows you to quickly increase the basic magnification (please refer to the **Magnification** line in the [Specifications](#) table) by 2, 4 or 8 times.

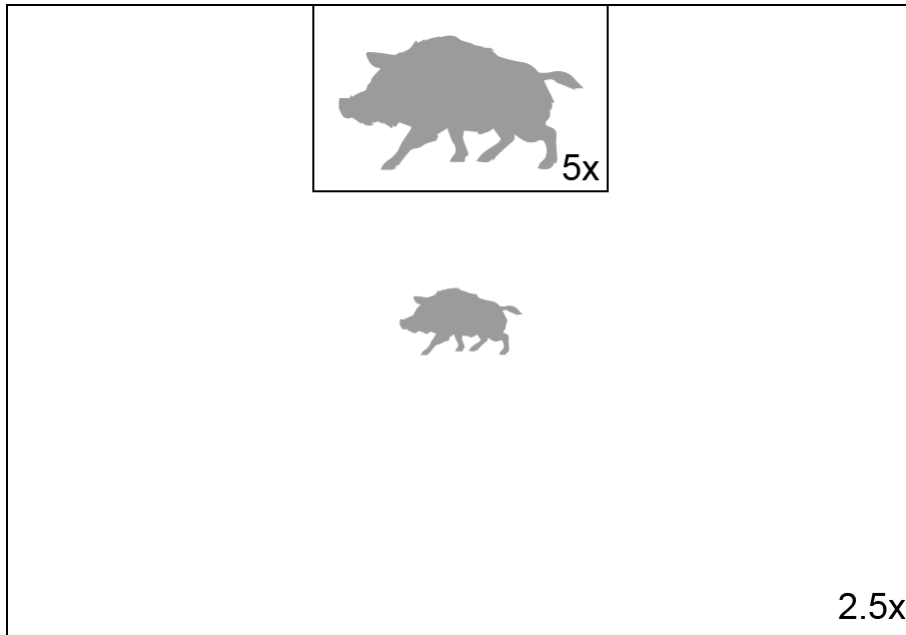
- To operate the discrete digital zoom, press successively the **UP/ZOOM (7)** button.
- The digital zoom will not be saved after the device is re-started.

PiP Function

Show device diagram



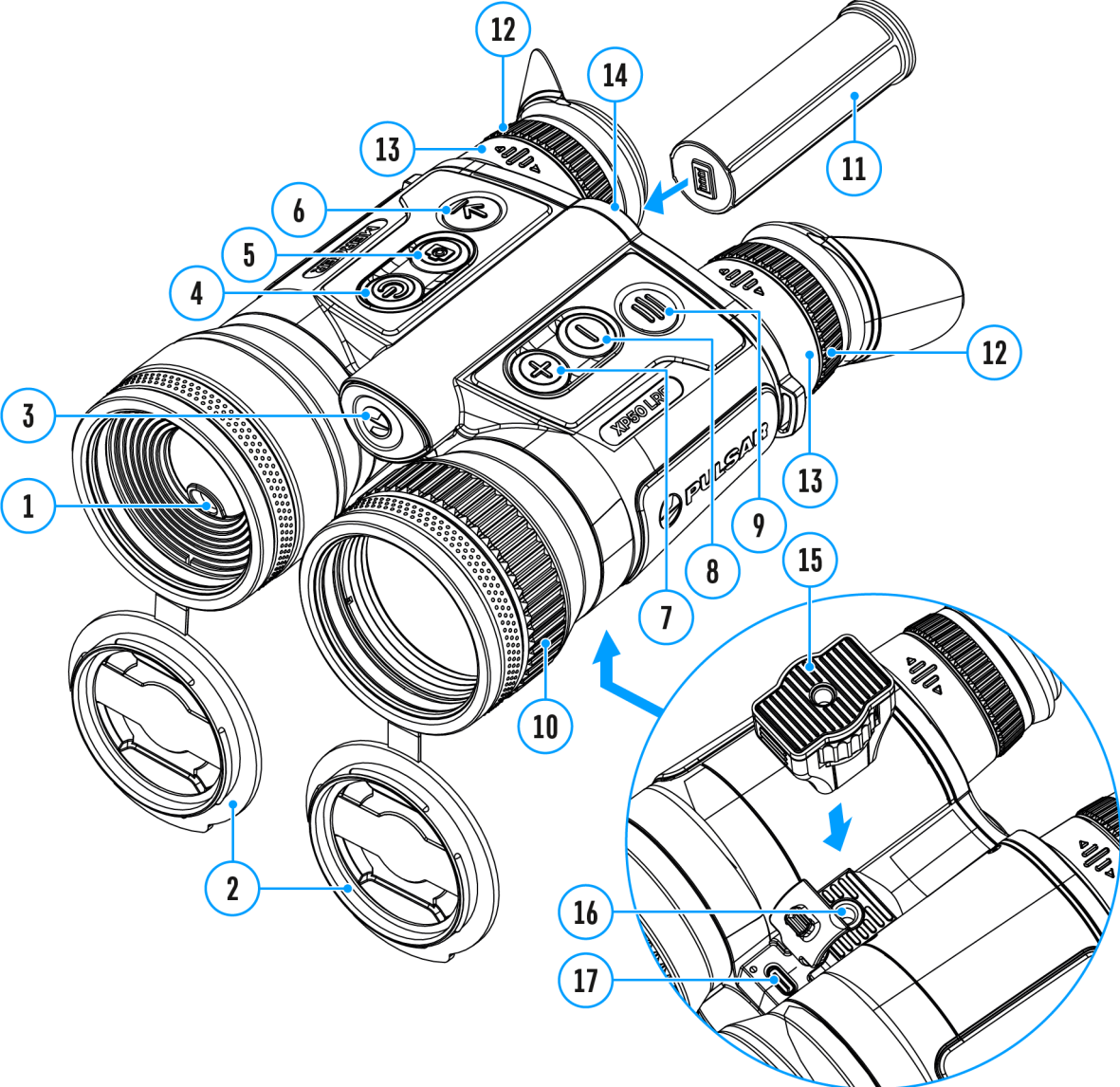
PiP ("Picture in Picture") allows you to see a zoomed image simultaneously with the main image in a dedicated window.



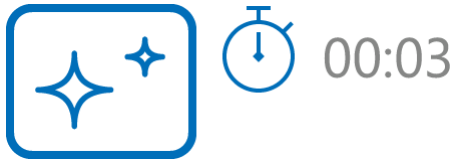
- Turn on/off the PiP function with a long press of **UP/ZOOM (7)** button.
- Change zoom ratio in the PiP window with a short press of **UP/ZOOM (7)** button.
- The zoomed image is displayed in a dedicated window, while the image in the rest of the screen is displayed at base magnification (2.5x).
- When PiP is turned on, you can operate the discrete and continuous digital zoom. The magnification will take place only in the dedicated window.
- When PiP is turned off, the image is shown with the optical magnification set for the PiP function.

Display-Off Function

Show device diagram




The Display-Off function deactivates transmission of image to the displays by minimizing its brightness. This prevents accidental disclosure. The device keeps running.



The displays can be turned off automatically if the **proximity sensor** is turned on or by pressing the **ON/OFF (4)** button if the proximity sensor is turned off.

The proximity sensor is turned on:

1. When the device moves away from the user's face, the displays will turn off.
2. When the device approaches the user's face, the displays will turn on again.
3. While holding the **ON/OFF (4)** button, a countdown icon  00:03 will appear on the displays and the device will turn off.

The proximity sensor is turned off:





1. When the device is on, press and hold the **ON/OFF (4)** button. The displays will turn off, the current time and the "**Display off**" icon will appear.
2. Turn the displays back on with a short press of the **ON/OFF (4)** button.
3. When you press and hold the **ON/OFF (4)** button, the displays show the "**Display off**" icon with a countdown. Pressing & holding the button down for the duration of the countdown will power the device off completely.




Wi-Fi Function

The device has a function enabling wireless communication with external devices (smartphone or tablet) via Wi-Fi.

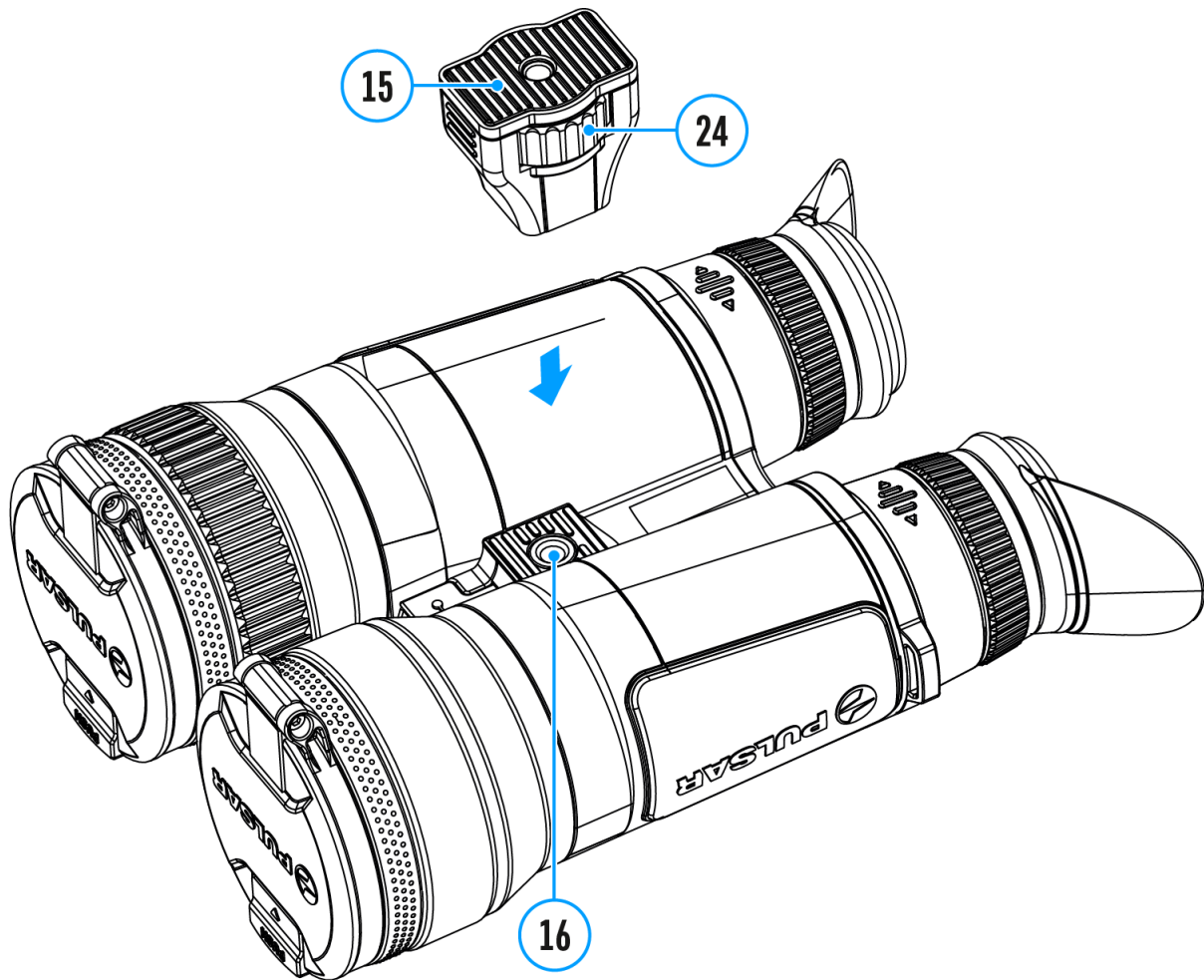
- Turn on the wireless module in the **Wi-Fi Activation**  menu option.

Wi-Fi operation is shown in the status bar as follows:

Status bar indication	Connection status
	Wi-Fi is off
	Wi-Fi activated by the user, Wi-Fi in the device is being activated
	Wi-Fi is on, no connection with device
	Wi-Fi is on, device connected

- Your device is detected by an external device as "MERGER_XXXX", where XXXX – is the last four digits of device's serial number.
- After entering the password (default: **12345678**) on an external appliance (see **Password Setup** subsection of the **Wi-Fi Settings** section for more information on setting a password) and connection is established, the icon  in the status bar changes to .  found or type unknown

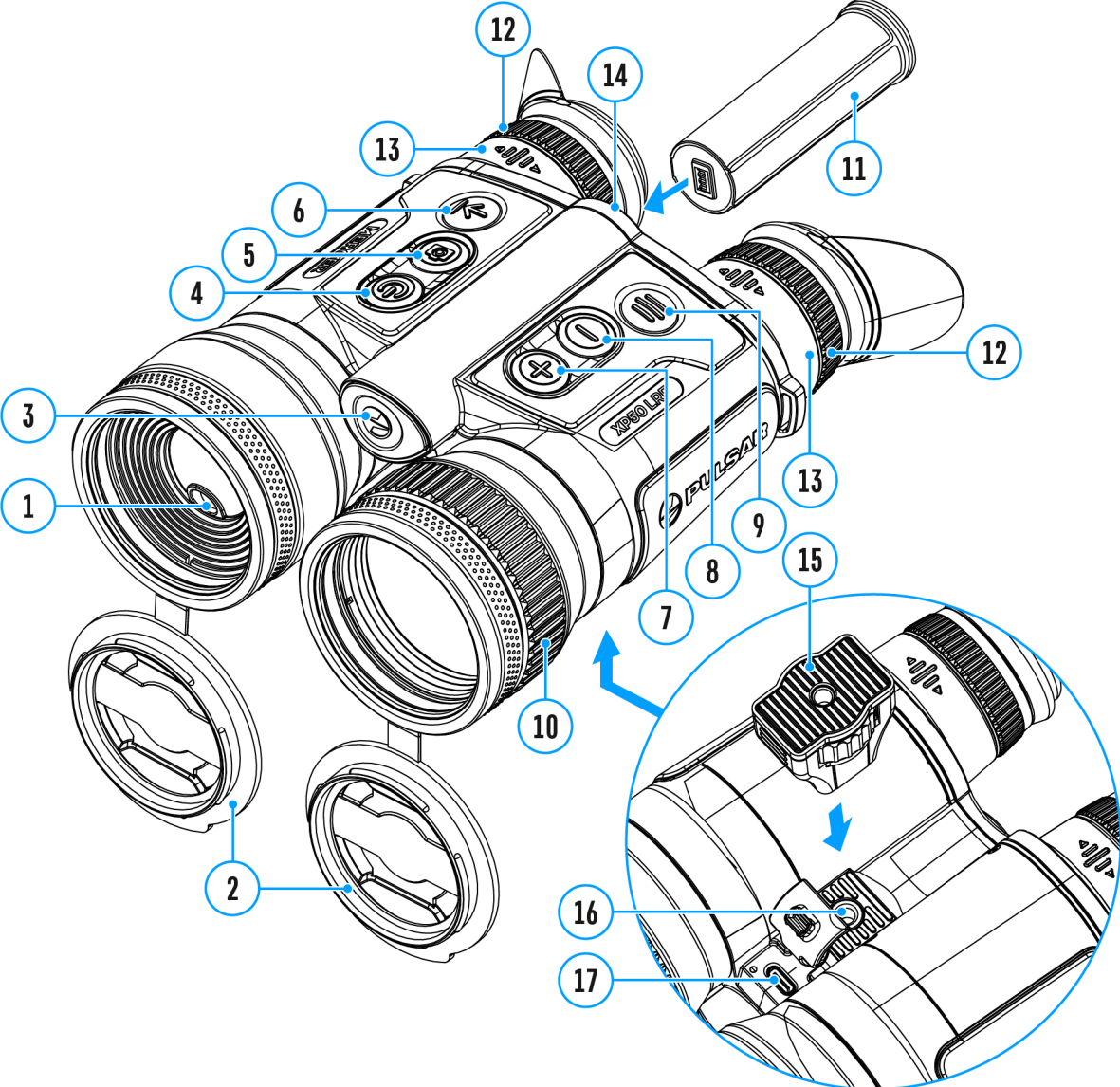
Installing the Device on a Tripod



1. Attach the tripod adaptor **(15)** to the socket **(16)**.
2. Screw the adapter wheel **(24)** clockwise until it stops.
3. Secure the adaptor with the device on a tripod.

USB Connection

Show device diagram




USB connection



- ▶ Use as power
- Use as memory card

1. Connect one end of the USB cable to the USB Type-C **(17)** connector of the riflescope, the other one to the port on your computer using a USB Type-A adapter.
 2. Turn the device on with a short press of the **ON/OFF (4)** button (device that has been turned off cannot be detected by your computer).
 3. Your device will be detected by the computer automatically; no drivers need to be installed.
 4. Two connection modes will appear on the image: **Power** and **Memory Card** (external memory).
 5. Select connection mode with **UP (7)/DOWN (8)** buttons.
 6. Confirm selection with a short press of the **MENU (9)** button.
-

Power

- In this mode, when a computer is used as an external power supply, the icon  appears in the status bar. The device will continue operating and all functions are available.
 - The Battery pack installed in the device is not being charged!
 - A battery recharge feasibility depends on your computer's USB port.
-

Memory Card

- 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 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 connection was made, recording stops and video is saved.
-

USB Disconnection

- When the USB is disconnected from the device connected as the **Power** mode, the device continues operating from the rechargeable batteries if they are sufficiently charged.
- When USB is disconnected from the device where connection is in the **Memory Card** mode, the device remains on the OFF state. Turn the device on for further operation.

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.



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

1. Download free Stream Vision 2 App in [Google Play](#) or [App Store](#).
2. Connect your Pulsar device to your mobile device (smartphone or tablet).
3. Launch Stream Vision 2 and go to section “Settings”.
4. Select your Pulsar device and press “Check firmware update”.
5. 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 phone, please turn on mobile data transfer (GPRS/3G/4G) to download update;
- if your Pulsar device is not connected to your phone but is already listed in “Settings” > “My devices” section, you may use Wi-Fi to download update.

Find answers to frequently asked questions about using Stream Vision 2 [here](#).

Technical Inspection

It is recommended to carry out a technical inspection before each use of the device. Check the following:

- External view (there should be no cracks on the housing).
- The state of the objective, eyepiece and rangefinder lenses (there should be no cracks, spot, dust, deposits etc.).
- The state of the rechargeable battery (should be charged) and the electric contacts (should be no signs of salts, oxidation or debris).
- Correct functioning of the controls.

Technical Maintenance

Maintenance should be carried out no less frequently than twice a year, and should consist of the following measures:

- Wipe the exterior surfaces of metal and plastic parts off dust and dirt with a cotton cloth. To avoid damage to the paint coating, do not use chemically active substances, solvents, etc.
- Clean the electric terminals of the Battery Pack and device's battery slot using a grease-free organic solvent.
- Check the lenses of the eyepiece, objective and rangefinder. If required, remove dust and sand (preferably by a noncontact method). Clean the external surfaces of the lenses with products expressly designed for this purpose.

Storage

- Always store the device in its carrying case in a dry, well-ventilated space.
- Remove the Battery Pack for long-term storage.

Troubleshooting

The device does not turn on

Possible cause

The batteries are completely discharged.

Solution

Charge the batteries.

The device does not operate on external power supply

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 blurry, with vertical stripes and uneven background

Possible cause

Calibration is required.

Solution

Carry out calibration according to [Calibration Mode](#) section.

Black screen after calibration

Solution

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

Colored 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 level in the [Quick Menu](#).

Poor image quality / Detection range reduced

Possible cause

Problems described may arise in adverse weather conditions (snow, rain, fog etc.).

Smartphone or tablet cannot be connected to the device

Possible cause

Password in the device was changed.

Solution

Delete network and connect again inserting the password saved in the device.

Possible cause

There are too many Wi-Fi networks in the area where the device is located which may cause signal interference.

Solution

To ensure stable Wi-Fi performance, move the device to an area with few or no Wi-Fi networks.

Solution

Switch the device's Wi-Fi band.

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 band 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

Observation through glass.

Solution

Remove the glass from the field of vision.

There are several light or black dots (pixels) on device's displays or microbolometer

Solution

The presence of such pixels is associated with the manufacturing technology of displays and microbolometer. It is not a defect.

When using the device at below zero temperatures the image quality is worse than at positive temperatures

Possible cause

Because of variations in thermal conductivity, objects (surrounding environment, background) under observation become warm more quickly at above-zero temperatures, which allows higher temperature contrast and, thus, the quality of the image produced by a thermal imager will be better.

At low operating temperatures, objects under observation (background) normally cool down to roughly identical temperatures, which leads to lower temperature contrast, and to image quality (precision) degradation. This is normal for thermal imaging device.

Rangefinder will not measure distance

Possible cause

There is an object in front of the receiver or emitter lens preventing signal transmission.

Solution

Make sure that: the lenses are not blocked by your hand or fingers; the lenses are clean.

Possible cause

The device is not being held steadily when measuring.

Solution

Do not stress the device when measuring.

Possible cause

Distance to the object exceeds 1000 m.

Solution

Pick an object at a distance not longer than 1000m.

Possible cause

Low reflection ratio (for example, tree leaves).

Solution

Pick an object with higher reflection ratio (see point **Additional Information** in section [Laser Rangefinder](#)).

Large measurement error

Possible cause

Inclement weather conditions (rain, mist, snow).

Specifications

XP50 PRO

Model	XP50
SKU	77465
Microbolometer	
Type	uncooled
Resolution, pixels	640x480
Pixel Pitch, μm	17
NETD, mK	< 25
Frame rate, Hz	50
Optical Characteristics	
Lens, mm	F50 F/1.0
Continuous digital zoom, x	2.5-20
Digital zoom	2x/4x/8x
Minimum Focus Distance, m/y	5 / 5.47
Eye relief, mm/inch	15 / 0.59
Exit pupil diameter, mm	3.5
Field of view (HxV), degrees / m@100m	12.4 / 21.8
Diopter adjustment, D	± 5
Interpupillary distance adjustment, mm	56-71
Range of detection (deer type object), m/y	1800 / 1970
Display	

Type	AMOLED
Resolution, pixels	1024x768
Operational Characteristics	
Power supply, V	3.7
Battery type / Capacity / Output voltage	Li-Ion Battery Pack APS3 / 3200 mAh / DC 3.7 V (removable) Li-Ion Battery Pack / 4000 mAh / DC 3.7 V (built-in)
External power supply	5V
Operating time on Battery Pack (at t=22°C), h*	10
Degree of protection, IP code (IEC60529)	IPX7
Operating temperature range, °C / ° F	-25 ... +50 / -13 ... 122
Dimensions, mm / inch	196x143x76 / 7.72x5.59x2.99
Weight (without battery), kg / oz	0.8 / 28.22
Video Recorder	
Video / photo resolution, pixel	1024x768
Video / photo format	.avi / .jpg
Built-in memory	16 Gb
Wi-Fi Channel**	
Frequency	2.4/5 GHz
Standard	IEEE 802.11 b/g/n/ac
Characteristics of the Rangefinder	
Wavelength, nm	905
Max. measuring range***, m/y	1000 / 1094

Measurement accuracy, m

+/-1

*Actual operating time depends on the extent of using Wi-Fi, integrated video recorder and integrated laser rangefinder.

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

***Depends on the characteristics of the object under observation and environmental conditions.

Legal Compliances and Disclaimers

Attention! Merger thermal imaging binoculars require a license if exported outside your country.

Electromagnetic Compliance

This product complies with EU Standard EN 55032:2015, Class A.

Warning! Operation of this equipment in a residential environment could cause radio interference.



Caution - use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



This product is subject to change in line with improvements to its design.

Repair of the device is possible within 5 years.

