USER MANUAL

NORDFORCE XQ35

ENGLISH

Technical Specifications

MODEL	NORDFORCE XQ35
SKU	26201
MICROBOLOMETER	
Microbolometer Manufacturer	HikVision
Type	Uncooled
Resolution, Pixels	384x288
Pixel Pitch, µm	17
Frame Rate, Hz	50
OPTICAL CHARACTERISTICS	
Lens, mm	F35, F/1.0
Magnification ratio, x	2.5-20
Eye relief, mm/inch	50/1.96
Field of view angle (horizontal), °/m@100m	10.7 / 18.7
Eyepiece focusing range, diopters	-3/+5
Detection distance (Object of deer type), m/y	1100/1203
AIMING RETICLE	
Click value (H/V), mm@100 m	24/24
Click range (H/V), mm@100 m	8640/6264
DISPLAY	
Type	AMOLED
Resolution, pixels	1024x768
VIDEO RECORDER	
Photo/video resolution, pixels	720x576
Video/photo format	.mp4 / .jpg
Built-in memory	16 Gb
OPERATING FEATURES	
Battery type / Rated Output Voltage / Quantity	CR123A / 3 V / 2 pcs. or RCR123A / 3.7 V / 2 pcs.
External power supply	5 B (USB Type-C)
Max. operating time at t=22 °C, h	4
Max. recoil power on rifled weapon, Joules	6000
Max. recoil power on smooth-bore weapon, caliber	12
Degree of protection, IP code (IEC60529)	IPX6
Operating temperature, °C (°F)	-20 – +55 (-4 – +131)
Dimensions, mm/inch	285x63x60 / 11.22x2.48x2.36
Weight, kg/oz	0.55 / 19.4

Package Contents

- Nordforce thermal imaging riflescope
- 2x CR123A batteries
- USB Type-C Cable
- Carrying Case
- Lens Cleaning Cloth
- Quick Start Guide

Description

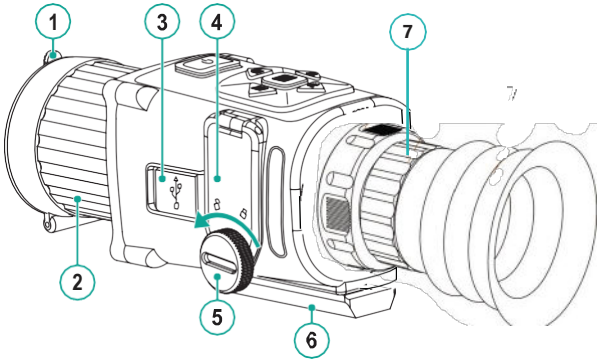
The Nordforce thermal imaging riflescope is designed for use at any time of the day and is suitable for a variety of applications, including hunting, shooting sports, observation and more.

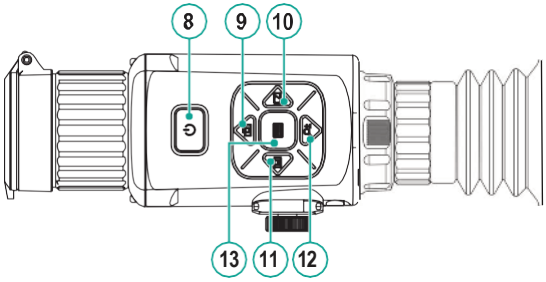
Features

- NETD of thermal imaging microbolometer less than 40 mK
- Long detection range over 1000 m
- Variable magnification from 2.5x to 20x
- High contrast AMOLED display with a resolution of 1024x768
- Integrated photo and video recorder
- 16 GB internal memory
- Aiming mode “Picture in Picture”
- 4 color palettes
- 5 digital reticles / 5 zeroing profiles
- Durable and lightweight body

Components and Controls

1. Lens cover
2. Lens focus ring
3. USB Type-C port
4. Battery compartment cover
5. Battery cover lock
6. Base for installation of the mount
7. Eyepiece diopter adjusting ring
8. **ON/OFF** button
9. **REC/UP** button
10. **CALIBRATION/RIGHT** button
11. **MODE/LEFT** button
12. **ZOOM/DOWN** button
13. **MENU** button
14. Mount (purchased separately)





Buttons Operation

BUTTON	SHORT PRESS	LONG PRESS
ON/OFF (8) 	Sleep mode on/off (press for 2 seconds)	Turn on/off the device
REC/UP (9) 	Capture a photo / Upwards navigation	Start/stop video recording
CALIBRATION/ RIGHT (10) 	Microbolometer calibration	–
MODE/LEFT (11) 	Switch color pallets	–
ZOOM/DOWN (12) 	Zoom / Navigate downwards	Show/hide the reticle
MENU (13) 	Show/hide the status bar / Move to the next selection	Enter/exit the menu / Exit submenu with confirmation of selection

Guidelines for Operation

The riflescope has been designed for long-term use. To ensure long performance, please adhere to the following:

- Before use make sure that you have installed and fixed the mount according to the instructions of the section **Weapon Mounting**.
- Turn the scope off after use.
- The riflescope is not designed for submersion.
- Attempts to disassemble or repair the riflescope will void the warranty!
- The riflescope can be used in various operating temperatures. However, if it has been brought indoors from cold temperatures, do not turn it on for 2 to 3 hours. This will prevent external optical surfaces from fogging.
- If the scope is unable to mount onto the rifle securely, or you have doubts about the mounting system, see a qualified gunsmith.
- **Using the weapon with a poorly mounted riflescope can lead to inaccurate target shooting!**
- To ensure reliable performance, it is recommended to carry out regular technical inspections of the unit.

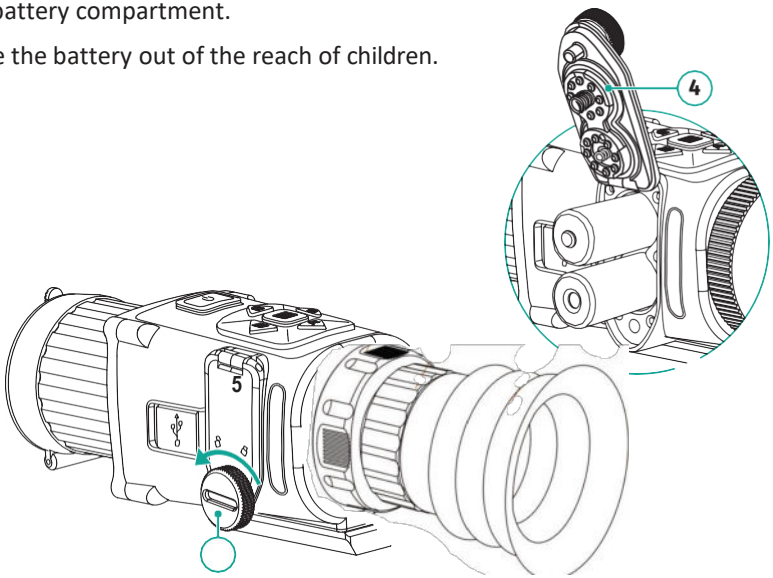
Using Batteries

Installing Batteries

- Unscrew the battery cover lock **(5)** counterclockwise.
- Flip the cover **(4)** up to open the battery container.
- Install two CR123A batteries or two RCR123A rechargeable batteries (purchased separately), observing the polarity indicated on the batteries and the markings on the riflescope body.
- Close the battery container cover **(4)**.
- Screw the battery cover lock **(5)** clockwise until it stops.

Safety Measures

- Use an appropriate charger to charge RCR123A rechargeable batteries. **The riflescope does not support charging rechargeable batteries in the battery compartment.**
- Do not expose the battery to high temperatures or naked flame.
- Do not dismantle or deform the battery.
- Do not subject the battery to shocks or falls.
- The battery is not intended to be immersed in water.
- When storing the device for a long time, remove the batteries from the battery compartment.
- Store the battery out of the reach of children.



External Power Supply

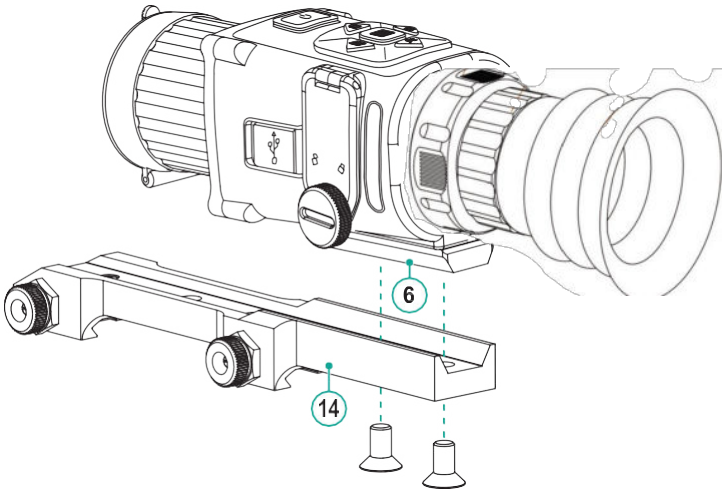
External power is supplied from from an external source, such as a 5V Power Bank with a USB Type-A connector.

- Attach the external power source to the device's USB Type-C connector **(3)**.
- The device will switch to operation from the external power source. The batteries are not charged.
- Battery icon will show full charge .
- When the external power supply is disconnected, the device switches to the internal power supply without the device powering off.

Operation

Weapon Mounting

- Using the hex wrench and screws, fix the mount **(14)** (purchased separately) in the desired position on the base **(6)** of the riflescope.
- Loosen the screws. Apply some thread sealant to the screw threads and tighten them fully. Allow the sealant to dry for the time specified in the instructions.
- Before using the riflescope for hunting, follow the instructions in the **Zeroing** section.

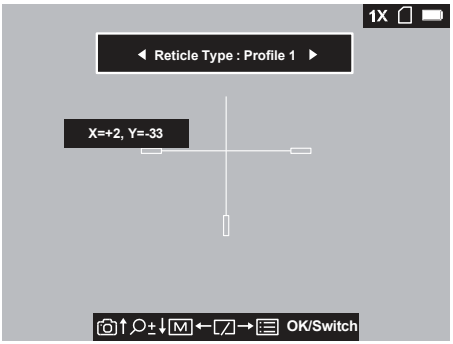


Powering On and Image Settings

- Open the lens cover **(7)**.
- Turn on the device with a long press (about 3 seconds) of the **ON/OFF** button. In a few seconds an image will appear on the display.
- Wait for the symbols to appear on the display.
- Adjust the eyepiece diopter ring **(7)** until the symbols in the display are sharp.
- On the first start, select the language (EN – English) and supply voltage (3 V – CR123 batteries, 3.7 V – RCR123A rechargeable batteries) in the window that appears.
- Rotate the lens focus ring **(2)** to achieve a sharp image of the visual target.
- Open the menu with a long press of the **MENU** button and select the required calibration mode in the main menu – automatic, semi-automatic or manual.
- Calibrate the image by briefly pressing the calibration button (when semi-automatic or manual calibration mode has been selected). Close the lens cover when calibrating manually.
- Select the appropriate color palette with a long press of the **MODE** button.
- Select the desired observation mode (Forest or Identification), the brightness and image contrast values in the menu .
- Briefly press the **ZOOM** button to change the magnification
- Hold down the **ON/OFF** button for 2 seconds and then release to enter sleep mode. A countdown appears on the screen. After a certain period of time the device enters sleep mode.
- Select the desired observation mode (**Forest** or **Identification**), the brightness and image contrast values in the menu .
- Briefly press the **ZOOM** button to change the magnification
- Hold down the **ON/OFF** button for 2 seconds and then release to enter sleep mode. A countdown appears on the screen. After a certain period of time the device enters sleep mode.

Zeroing

- Enter the device menu with a long press of the **MENU** button.
- Use the **UP** / **DOWN** buttons to select the **Zeroing** submenu.
- Press the **MENU** button briefly to enter the submenu.
- The screen will display:
  - Zeroing profile selection menu;
  - Menu for changing the coordinates of the reticle: X (horizontal displacement), Y (vertical displacement). Default coordinates: X=0 / Y=0;
  - Hints at the bottom of the display.



- Select the desired zeroing profile. Short press the **LEFT**/**RIGHT** buttons to switch between the zeroing profiles.
- Align the central part of the reticle (crosshair) with the center of the zeroing target (or other aiming point). Make a zeroing shot.
- Re-align the center of the reticle with the aiming point, firmly fixing the weapon in the shooting bench.
- Select the menu for changing the coordinates of the reticle with a short press of **MENU** button.
- If the point of impact does not coincide with the aiming point, press the
- **UP**/ **DOWN** /**LEFT** /**RIGHT** buttons to move the reticle to the point of impact. The movement of the reticle is accompanied by a change in the values of the X and Y coordinates.
- Press and hold the **MENU** button to exit the submenu and save the zeroing settings.
- To verify the accuracy of zeroing, it is recommended to do a test shot.

Notes:

- Each zeroing profile corresponds only to one reticle type and one zeroing coordinates. The same reticle type cannot be used in different profiles.
- If during zeroing you are not able to securely fix the weapon, you can calculate the required values of the horizontal and vertical displacement of the reticle using the formula: **value of the required displacement of the reticle, mm / click value (24 mm) = Number of steps (clicks)** that must be made to move the reticle to the point of impact.
- 1 step along the X or Y axis = 1 click

Color Palettes

- To switch color palettes, briefly press the **MODE** button.

The device has 4 color palettes:

White Hot - the black color corresponds to cold temperature, the white color – hot temperature.

Black Hot – the white color corresponds to cold temperature, the black color – hot temperature.

Violet – the violet color corresponds to cold temperature, the yellow color – hot temperature.

Red Hot - the black color corresponds to cold temperature, the red color – hot temperature.

Digital Zoom

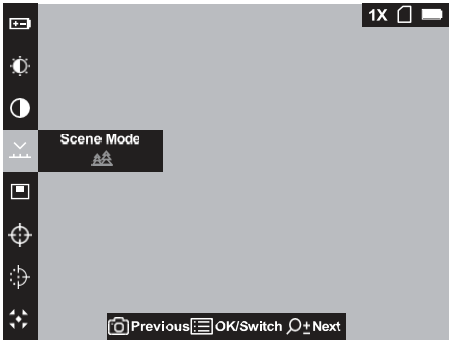
- To change the magnification of the device, briefly press the **ZOOM** button. The device sequentially changes the magnification value with indication of the magnification ratio 1x 2x 4x 8x on the display (upper right corner).

Correspondence table of magnification ratios - optical magnification:

MAGNIFICATION RATIO, X	OPTICAL MAGNIFICATION, X
1x	2,5x
2x	5x
4x	10x
8x	20x

Menu

- Enter the menu with a long press of the **MENU** button.
- Press the **UP** / **DOWN** buttons to move through the menu functions.
- One short press of the **MENU** button opens a menu item.
- To exit the menu, press and hold down the **MENU** button.



Composition and description of the menu

Scene Mode	The devices have two observation modes: Forest (observation mode of objects within low thermal contrast conditions), Identification (high detalization mode). • Press and hold the **MENU** button to enter the menu. • Use the **UP** / **DOWN** buttons to select the **Scene Mode** menu option. • Switch the observation mode with a short press of the **MENU** button. • Save the selection and exit the menu with a long press of the **MENU** button. **Forest**. This is the best mode when searching and observing within field conditions, against the background of leaves, bushes and grass. The mode is highly informative about an object being observed as well as landscape details. **Identification**. This is the best mode for identifying objects in adverse weather conditions (fog, mist, rain and snow). It allows you to recognize the characteristics of an object being observed more clearly. Increased zoom may be accompanied by insignificant image graininess.
PIP	**Picture in Picture mode.** • Press and hold the **MENU** button to enter the menu. • Use the **UP** / **DOWN** buttons to select the **PIP** menu option. • Press the **MENU** button briefly to turn the function on/off.
Zeroing	• Press and hold the MENU button to enter the • Use the UP / DOWN buttons to select the Zeroing menu option. • Press the MENU button briefly to enter the submenu. • Follow the recommendations from the Zeroing section.

Reticle color	**Reticle color selection.** • Press and hold the **MENU** button to enter the menu. • Use the **UP** / **DOWN** buttons to select the **Reticle color** menu option. • Press the **MENU** button briefly to select one of the color options for the reticle. Available colors: white (with • inversion), green, red, black. • Save the selection and exit the menu with a long press of the **MENU** button
Calibration	**Calibration mode selection.** • Press and hold the **MENU** button to enter the menu. • Use the **UP** / **DOWN** buttons to select the **Calibration** menu option. • Press the **MENU** button briefly to switch the calibration mode. • Save selection and exit the menu with a long press of the **MENU** button. There are three calibration modes: **Automatic** • The device calibrates by itself according to the firmware algorithm. • You do not have to close the lens cover (the microbolometer is closed with an internal shutter automatically). • In this mode the user can calibrate the device using the calibration button. **Semi-automatic** • Calibration is activated with a short press of the calibration button. • You do not have to close the lens cover (the microbolometer is closed with an internal shutter automatically). **Manual** • Close the lens cover. • Press the calibration button briefly Having finished calibration, open the lens cover.

DPC	**Defective pixel correction function.** **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 relatively when digital zoom is activated.** **Nordforce thermal imaging riflescopes offer the possibility of removing any defective pixels on the microbolometer using firmware.** • Press and hold the **MENU** button to enter the menu.
	• Use the **UP** / **DOWN** • buttons to select the **DPC** menu option. • Press the **MENU** button briefly to enter the submenu. • A cursor appears in the center of the display, and an enlarged image of the selected area appears at the bottom right. • Press the **UP** / **DOWN** / **LEFT** / **RIGHT** buttons to align the cursor with the defective pixel (should be in the center of the enlarged image). • Briefly press the **MENU** button to remove the defective pixel. • Further, by moving the cursor on the display, you can delete the next defective pixel. • Press and hold the **MENU** button to save the pixel map and exit the submenu.
Language	**Language selection.** **Press and hold the MENU button to enter the menu.** • Use the **UP** / **DOWN** buttons to select the **Language** menu option. • Briefly press the **MENU** button to switch the language. Available languages: EN – English. • Save selection and exit the menu with a long press of the **MENU** button.

Device info 	• Press and hold the **MENU** button to enter the menu. • Use the **UP** / **DOWN** buttons to select the **Device info** menu option. • Briefly press the **MENU** button to display information about the device. Press and hold the MENU button to exit the menu. • Device information: - Firmware version - Serial number of the device
Reset settings 	• Press and hold the **MENU** button to enter the menu. • Use the **UP** / **DOWN** buttons to select the **Reset settings** menu option. • Press the **MENU** button briefly to enter the submenu. • Use the **LEFT** / **RIGHT** buttons to select "YES" to return to default settings or "NO" to cancel the action. • Confirm your selection with a short press of the **MENU** button. If you select "YES", wait until the reset is complete, after which the
	device will reboot. The following settings will be returned to their defaults: **Palette** – White hot **Scene Mode** - Identification **PIP** – off **Calibration Mode** - automatic **Language** – selected after reboot **Battery Voltage** - selected after reboot **Brightness** – 3 **Contrast** – 3 **Reticle** – hidden **Note:** when returning to default settings, the reticle color, zeroing parameters and pixel map are not reset.

Battery Voltage 	Depending on the type of batteries used, you must set the appropriate battery voltage in the settings. • Press and hold the **MENU** button to enter the menu. • Use the **UP** / **DOWN** buttons to select the **Battery Voltage** menu option. • Press the **MENU** button briefly to enter the submenu. • Briefly press the **MENU** button to select the voltage: 3.0 V for CR123A batteries or 3.7 V for RCR123A rechargeable batteries, or select “Cancel” to exit the submenu. • Press and hold the **MENU** button to exit the menu.

Brightness

- Press and hold the **MENU** button to enter the menu.
- Use the **UP** / **DOWN** buttons to select the **Brightness** menu option.
- Briefly press the **MENU** button to change the brightness of the display from 1 to 5.
- Save selection and exit the menu with a long press of the **MENU** button.

Note: after restarting the riflescope, the brightness settings are saved.

Contrast

- Press and hold the **MENU** button to enter the menu.
- Use the **UP** / **DOWN** buttons to select the **Contrast** menu option.
- Briefly press the **MENU** button to change the contrast of the display from 1 to 5.
- Save selection and exit the menu with a long press of the **MENU** button.

Note: after restarting the riflescope, the contrast settings are saved.

Status Bar

- To show/hide the status bar, briefly press the **MENU** button.

The status bar is located in the upper right corner of the display and displays information about the status of the riflescope, including:

- Current magnification
- Free space on the memory card:
  - memory card is empty;
  - the memory card is almost full (~ 350 MB of free space);
  - no space on the memory card (<300 MB free space);
- Battery level

Video Recording and Photography

The riflescope is equipped with functions for video recording and photography of the observed image that is saved on the built-in memory card.

Capturing a photo

- To capture a photo, briefly press the **REC** button.

Video recording

- Start video recording by long pressing the **REC** button.
- A timer with video recording time **00:00:03** appears in the upper left corner.
- To stop video recording, press and hold the **REC** button.
- Video files are saved to the built-in memory card:
  - after turning off video recording;
  - when the device is turned off, if recording was enabled;
  - when the memory card is full - if during video recording the memory card is full (the display will show the message “Memory full”).

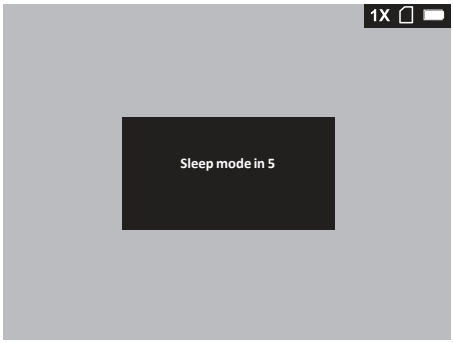
Notes:

- During video recording, it is impossible to enter the riflescope menu;
- Recorded videos and photos are saved to the built-in memory card as EZVZXXXX. JPG (for photos); EZVZXXXX.MP4 (for video). XXXX - four-digit total file counter (for photos and videos);
- After resetting the settings, the XXXX file counter is also reset;
- The number of files is limited by the riflescope’s internal memory;
- Regularly check the amount of free memory of the built-in memory card, transfer the footage to other media, freeing up space on the memory card.

Sleep Mode

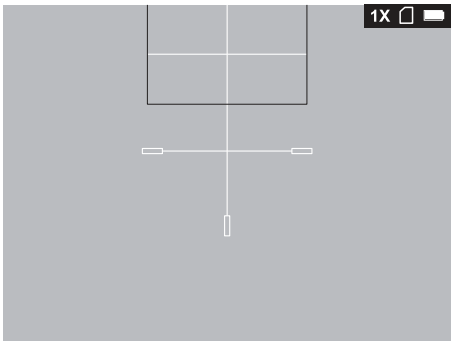
This function deactivates the image transmission to the display by minimizing its brightness. This helps prevent accidental disclosure. However, the device stays on.

- To enter sleep mode, hold down the **ON/ OFF** button for 2 seconds and then release. A window with a countdown will appear on the screen, after which the device will enter sleep mode.
- To exit sleep mode, hold down the **ON/ OFF** button for 2 seconds.



PIP Function

The **PiP** (Picture-in-Picture) function allows you to see both the main image and a magnified image with the selected reticle in a dedicated window.



- You can enable/disable the **PIP** function in the **"PIP"** section of the menu.
- An enlarged image of the central area of the display is shown in an additional window above.
- By briefly pressing the **ZOOM** button, the magnification in the **PIP** window and the main screen changes cyclically as follows:

MAIN SCREEN	1X	2X	4X	8X
PIP window	2x	4x	8x	8x

File Export

Important! When connecting to a computer, the riflescope must be turned on.

- Connect one end of the USB cable to the USB Type-C port **(3)** of the riflescope and the other end to the USB port on your computer.
- In the computer explorer, select the disk corresponding to the connected riflescope.
- Go to the **DCIM > 100EZVIZ** folder.
- Copy the files to your computer or delete them to free up the memory card.
- Disconnect the riflescope from the computer.

Notes:

- The first time you connect the riflescope to your computer, the drivers will be installed automatically.
- The batteries are not charged while connected to a computer.
- The riflescope uses a computer as an external power supply.

Technical Inspection

It is recommended to carry out a technical inspection each time before using the riflescope. Check the following:

- External view (there should be no cracks on the housing).
- Correct mounting of the riflescope on your rifle (clearances are not allowed).
- Ensure that the objective lens, eyepiece are free of cracks, grease spots, dirt, water stains and other residue.
- Correct functioning of the controls.
- Smoothness of the lens focus ring, eyepiece diopter adjusting ring.
- Charge level and condition of batteries or accumulators: there should be no traces of electrolyte leakage, corrosion of contacts.

Technical Maintenance

Technical maintenance should be done at least twice a year, includes the following steps:

- Clean the outside metal and plastic surfaces from dust, dirt and moisture; wipe the scope with a soft lint free cloth.
- Inspect the eyepiece lens and the objective lens; gently blow off any dust and sand, and clean using lens cleaner and a soft cloth.

Storage

- Always store the riflescope in its carrying case in a dry, well-ventilated space.
- For prolonged storage, remove the batteries.

Troubleshooting

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
The riflescope does not turn on.	Batteries are empty.	Replace CR123A batteries or charge
	Wrong polarity in the battery compartment.	Install batteries or accumulators according to the markings inside the battery container.
	Oxidized contact points in the riflescope, on the battery compartment cover or on the batteries.	Clean the contacts.
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.	Calibration is required	Perform image calibration according to Calibration section of the Manual.
The reticle is blurred and cannot be focused with the eyepiece diopter adjusting ring.	The diopter adjustment range is not enough for your eyesight.	If you wear prescription glasses with a range of -3/+5, keep glasses on when looking through the eyepiece.
	Condensation on the external surface of the eyepiece lens.	Clean the lens with a cloth.
The image is too dark.	Brightness or contrast level is too low	Adjust brightness/ contrast level.
With a crisp image of the reticle, the image of	Dust and condensate are covering the outer	Clean the lens surfaces with a blower and soft

the observed target that is atleast 30 m away is blurred.	or inner optical surfaces of the lens.	lens cloth. Let the riflescopem dry by leaving it in a warm environment for 4 hours.
The aiming point shifts after firing rounds.	The riflescope is not mounted securely or the mount was not fixed with thread sealant.	Check that the riflescope has been securely mounted, make sure that the same type and calibre bullets are being used as when the riflescope was initially zeroed; if your riflescope was zeroed during the summer, and is now being used in the winter (or the other way round), day or night, a slight shift of the aiming point is possible.
The riflescope will not focus	Wrong settings.	Adjust the riflescope according to the instructions given in the section **Powering On and Image Settings**. Check the surfaces of the eyepiece and objective lenses and clean them if necessary from dust, condensation, frost, etc. To prevent fogging in cold weather, apply a special anti-fog solution.
Poor image quality.	**Problems described may arise in adverse weather conditions** (snow, rain, fog etc.)	
When the riflescope is used in low temperature conditions the image	In positive temperature conditions, objects being observed (surroundings and background) heat up differently because of thermal conductivity, thereby	

quality of the surroundings is worse than in positive temperature conditions.	generating a high temperature contrast. Accordingly, image quality produced by the thermal imager will be higher.	
	In low-temperature conditions, objects being observed (background) will cool down to roughly the same temperature, as a rule, and thus the temperature contrast is substantially reduced and image quality (zoom) goes down. This is a distinctive feature of the thermal imaging riflescopes.	
There are several light or black dots (pixels) on the riflescope's display.	One or two pixels on the display of the riflescope in the form of bright white, black or colored (blue, red or green) dots may appear. These points cannot be removed and not a defect.	
Stripes appear on the display or image disappears.	The riflescope has accumulated static charge during operation.	As soon as the impact of the static charge is over, the device may reboot automatically; alternatively please turn off and restart the device.
The image of the object being observed is missing.	Observation through glass.	Remove the glass from the field of vision.
Error while taking pictures or recording video	The device is connected to a computer. In this mode, photography and video recording are disabled.	Disconnect the device from the computer.
	Memory card full.	Empty the memory card
The computer cannot identify the device.	Incorrect USB cable used.	If using a third-party USB cable, make sure it is less than 1m in length.