

QX500B1

HOLOGRAPHIC OPTICAL SIGHT / USER MANUAL



2026.10 | ERDI TECH LTD



1×

MAGNIFICATION

Wide aiming window



1 + 68 MOA

RETICLE

1 MOA dot + 68 MOA ring



≥ 1,000 h

OPERATING TIME

Level 5, 25 °C ± 5 °C



± 40 MOA

ADJUSTMENT RANGE

Elevation and windage



20 + 10

BRIGHTNESS LEVELS

Daylight and night vision



≤ 330 g

WEIGHT

Battery included

Folded optical path with a wide viewing window; Picatinny quick-detach mount and motion wake-up.

Values are controlled acceptance limits under the stated test conditions.

See Section 3, Technical Specifications, for the complete parameter list.

Contents

1. Overview	3
2. Key Features	4
3. Technical Specifications	4
4. Components and Controls	6
5. Battery	8
6. Mounting to a Picatinny Rail	9
7. Zeroing and Adjustment	10
8. Buttons and Basic Operation	12
9. Power Saving and Status Functions	14
10. Maintenance, Storage and Transport	14
11. Troubleshooting	16
12. Quick Start (First-Time Use)	17
13. Warranty and Service	17
Appendix A — Glossary	18
Appendix B — Reference Tables	18

About this manual. This manual describes the operation, inspection and maintenance of the QX500B1 holographic optical sight. Read it completely before mounting, zeroing or operating the sight, and keep it for future reference. Figures show the actual product; schematic drawings are labelled as such and are not to scale.

SAFETY INFORMATION

WARNING. Before mounting, adjusting or servicing the sight, make sure the firearm is unloaded, the chamber is empty, the magazine is removed and the muzzle is pointed in a safe direction. Wear eye and hearing protection when shooting.

CAUTION. The sight contains no user-serviceable parts. Do not disassemble, modify or repair it; unauthorised work voids the warranty and may compromise alignment and sealing.

NOTICE. The QX500B1 is an aiming aid. It does not replace safe firearm handling, and it does not magnify the target.

Throughout this manual, **WARNING** indicates a hazard that can cause injury, **CAUTION** indicates a hazard that can damage the sight, and **NOTICE** gives information that helps you get the best result from the product. All values are controlled acceptance limits under the corresponding test conditions. Document control and revision history are given below.

Document control and revision history

Document: QX500B1 Holographic Optical Sight — User Manual · English (en-US) · issued by ERDI TECH LTD.

Revision v5, 2026-10-18: supersedes v4 of 2026-10-01 (QX500D1 edition). The model designation is changed to QX500B1, the product name is confirmed as holographic optical sight, new product photography is used, and the inspection, mounting, zeroing, maintenance, troubleshooting and quick-start sections are expanded.

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1. Overview

The QX500B1 is a compact holographic optical sight with a folded optical path and a wide viewing window. A holographic reticle is reconstructed at the window and remains aligned with the shooter's eye, so the sight can be used with both eyes open while the target stays at its natural size and colour. The 1 MOA centre dot gives a precise aiming point, and the surrounding 68 MOA ring brackets the target for fast close-range acquisition.

The housing is machined from aviation aluminium with a black hard anodised finish and carries a Picatinny quick-detach mount with an adjustable tension lever. A three-button control pad on the right side of the housing selects the 20 daylight and 10 night-vision brightness levels, and motion wake-up brings the reticle back instantly after the sight has been left stationary. A single CR123A-size battery provides 1,000 hours or more of continuous operation at brightness level 5 and 25 °C ± 5 °C.



Figure 1-1 — QX500B1 holographic optical sight, right side: aiming window, button pad and quick-detach mount

1.1 Scope and How to Use This Manual

This document covers the intended use, acceptance inspection, mounting, zeroing, operation and maintenance of the QX500B1. It is written for armourers, instructors and end users who are familiar with safe firearm handling.

- **First-time users** should read Section 4 (components and controls), Section 5 (battery) and Section 6 (mounting) first, then follow Section 12 (Quick Start) to complete the initial set-up.
- **Before each use**, complete the pre-use technical inspection in 4.3.
- **If the sight behaves abnormally**, work through Section 11 before contacting service.
- All values in this document are controlled acceptance limits under the corresponding test conditions; items not listed are not technical commitments of this document.
- The product markings, button positions and display states are governed by the product itself.

1.2 Conventions and Symbols

Symbol or convention	Meaning
WARNING	Hazard that can cause injury to people.
CAUTION	Operation that can damage the sight, the battery or the firearm.
NOTICE	Recommendation that improves the result or extends service life.
±	Tolerance about the nominal value.
MOA	Minute of angle; 1 MOA subtends about 29.1 mm at 100 m.
mil	Milliradian; 1 mil subtends about 100 mm at 100 m.

1.3 Intended Use

The QX500B1 is intended for close- to medium-range aiming on rifles, carbines, shotguns and other platforms fitted with a MIL-STD-1913 / Picatinny rail. It is an aiming aid: it does not magnify the target, it does not illuminate the target, and it does not replace safe firearm handling or marksmanship training. Use the sight only within the environmental limits given in Section 3, and only on firearms and mounts that are mechanically sound.

Local law. Firearm accessories are regulated differently in every country and state. The user is responsible for compliance with all applicable laws governing the purchase, possession, transport and use of this product.

2. Key Features

The table below summarises the features that define the QX500B1. The complete parameter list is given in Section 3.

Feature	Description
Holographic imaging with a folded optical path	1× observation with a wide aiming window; comfortable both-eyes-open aiming.
1 MOA dot + 68 MOA ring reticle	A precise centre dot for distance and an open ring for fast close-range acquisition.
20 daylight + 10 night-vision brightness levels	Daylight levels for bright conditions; night-vision levels for use with compatible image-intensifying equipment.
Motion wake-up and auto power-off	The reticle wakes when the sight is moved and the sight switches off after 4 h of continuous inactivity.
Low-battery indication	The reticle flashes when the remaining capacity falls below 5 %.
Picatinny quick-detach mount	Tool-free mounting and removal, with a tension adjuster for a repeatable, shake-free fit.
Machined all-metal housing	Aviation aluminium, CNC machined, black hard anodised; IP67 ingress protection.
Endurance	Continuous operating time ≥ 1,000 h at brightness level 5, 25 °C ± 5 °C from a single CR123A-size battery.
Compact and light	≤ 73 × 49 × 59 mm and ≤ 330 g including the battery.

Reticle geometry, brightness levels and endurance are controlled parameters of the product and are not user-adjustable beyond the functions described in Section 8.

3. Technical Specifications

Parameter note: unless otherwise stated, the values listed in this manual are controlled acceptance limits under the corresponding test conditions. Values are given for the standard QX500B1; do not infer performance beyond the stated test conditions.

Parameter	Specification	Parameter	Specification
Optical			
Magnification	1× (± 10 %)	Window size	(30 ± 1) × (23 ± 1) mm
Reticle	1 MOA dot + 68 MOA ring	Effective distance	≥ 100 m
Parallax error	≤ 2 MOA (100 m, central ½ field of view)	Light source wavelength	650 nm
Power and electronics			
Power supply	1 × CR123A-size battery	Voltage compatibility	3.0 V, or approved 3.7 V rechargeable battery
Continuous operating time	≥ 1,000 h (brightness level 5, 25 °C ± 5 °C)	Low-battery indication	Reticle flashes below 5 % capacity
Daylight brightness	20 levels	Night-vision brightness	10 levels
Motion wake-up	Provided	Auto power-off	After 4 h of continuous inactivity
Mechanical and mount			
Housing material	Aviation aluminium	Machining	CNC machined
Surface finish	Black hard anodised	Mount interface	Picatinny quick-detach
Adjustment range	Elevation and windage ≥ ± 40 MOA each	Click value	Nominal 0.5 MOA, ± 15 %
Zero shift	≤ 1 mil (including repeated mounting)	Sight height	38 mm
Physical			
Overall dimensions	≤ 73 × 49 × 59 mm (tolerance ≤ ± 5 mm)	Weight	≤ 330 g (battery included)
Environmental and durability			
Operating temperature	– 30 °C ± 2 °C to + 55 °C ± 2 °C	Storage temperature	– 40 °C ± 2 °C to + 70 °C ± 2 °C
Shock test	1,200 g, 400 shocks; zero shift ≤ 3 MOA	Ingress protection	IP67; 1.0 ± 0.1 m / 0.5 h
Package drop test	1.22 m, 26 drops onto 8-ply plywood	Storage life	≥ 10 years (excluding battery)

- **Operating time** is quoted at brightness level 5 and 25 °C ± 5 °C. Higher brightness levels, low temperatures and repeated motion wake-up reduce the operating time.
- **Effective distance** is a test-condition value and is not a guarantee of hit probability; actual usable distance depends on the target, the light conditions and the shooter.
- **Parallax error** is specified at 100 m over the central half of the field of view.
- **Zero shift** is specified including repeated mounting and removal, when the sight is remounted in the same rail slot.
- **Ingress protection** (IP67) is verified at 1.0 ± 0.1 m for 0.5 h with the battery cover correctly fitted and tightened. It is not a rating for diving or high-pressure washing.

3.1 Parameter Conditions and Interpretation

Acceptance tests are carried out with a correctly charged battery, the sight mounted on a clean rail, and the ambient conditions within the stated limits. A parameter that is not listed in this manual is not a technical commitment of this document. Component-level values in supplier data sheets do not automatically apply to the assembled sight: only the values in the table above describe the QX500B1 as supplied.

4. Components and Controls

The principal components are shown in Figure 4-1 and listed in 4.1. The sight is operated with the +, – and NV buttons on the right side of the housing. The elevation and windage adjustment caps are on the opposite side, where the adjustment markings are visible (Section 7).

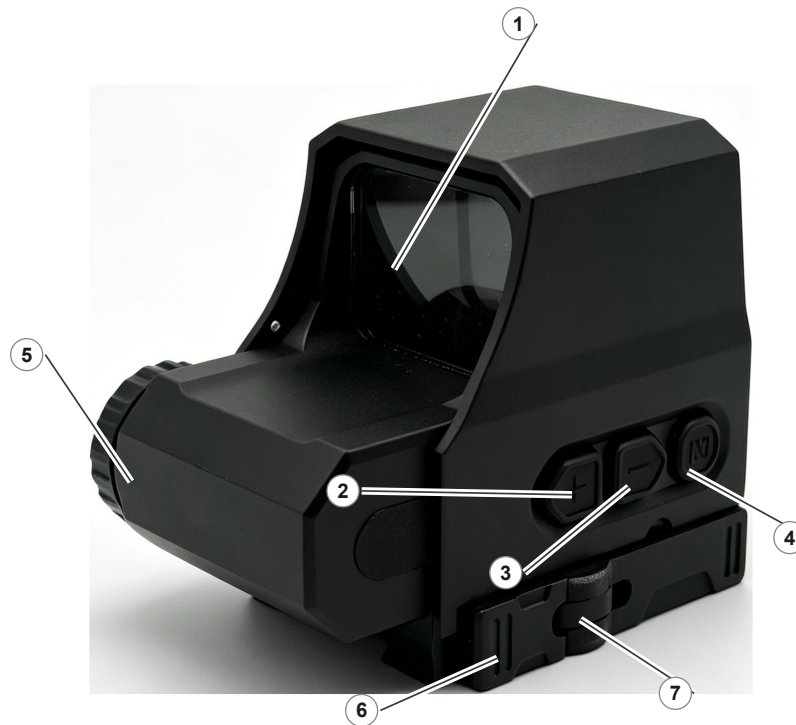


Figure 4-1 — Right side of the QX500B1: aiming window, button pad, battery-compartment cover and quick-detach mount

4.1 Component List

No.	Component	Function
1	Aiming window	Holographic combiner window; keep the glass clean and free of damage.
2	+ button	Short press: power on, or increase reticle brightness by one level.
3	– button	Short press: power on, or decrease reticle brightness by one level.
4	NV button	Short press: enter or exit night-vision mode.
5	Battery-compartment cover	Sealed cover; rotate anticlockwise to open and clockwise to close.
6	QD quick-detach lever	Locks and releases the sight on a Picatinny rail; no tools required.
7	Tension adjuster	Sets lever tension so that the mount locks firmly without looseness.
8	Elevation adjustment cap	On the opposite side of the housing, marked U / D; covers the elevation adjuster.
9	Windage adjustment cap	On the opposite side of the housing, marked R / L; covers the windage adjuster.

4.2 Reticle

The QX500B1 uses a single, fixed reticle: a 1 MOA centre dot surrounded by an open 68 MOA ring. The dot provides a precise aiming point for deliberate fire; the ring frames the target for fast, both-eyes-open acquisition. Because the reticle is holographically reconstructed, it stays sharply defined with the target in focus and remains visible near the edges of the window.

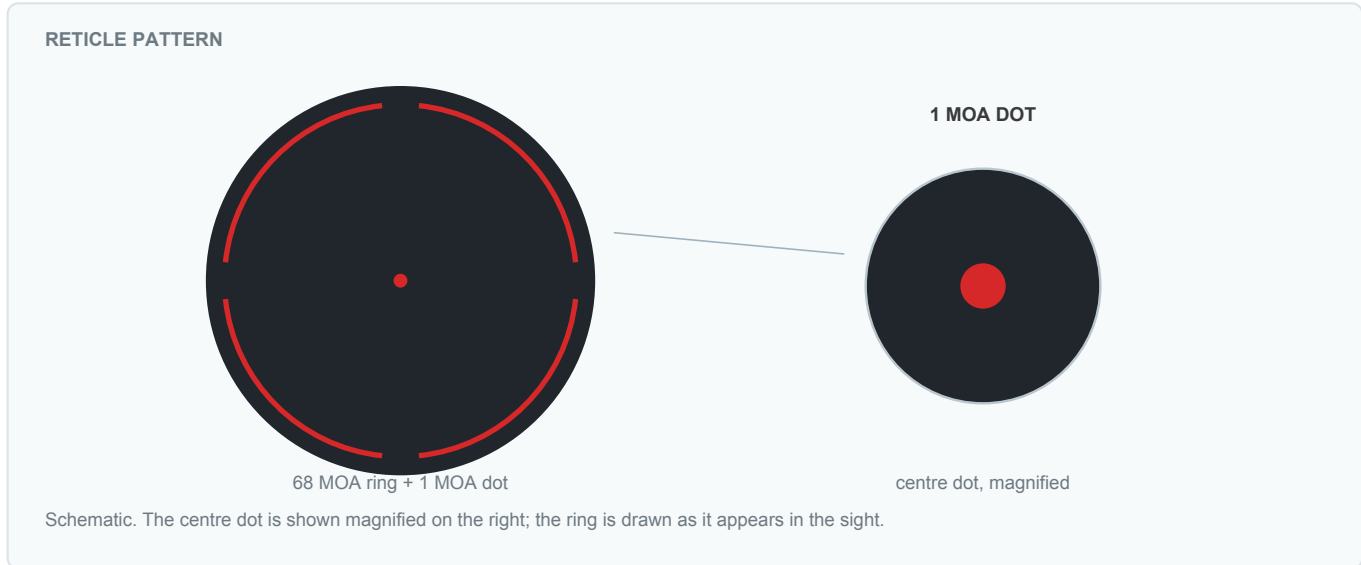


Figure 4-2 — Reticle pattern: 1 MOA dot and 68 MOA ring (schematic, not to scale)

Reticle element	Angular size	Approximate subtension at 25 m / 50 m / 100 m
Centre dot	1 MOA	7 mm / 15 mm / 29 mm
Ring	68 MOA	494 mm / 988 mm / 1,976 mm

Subtensions are geometric reference values calculated from the angular size (1 MOA $\approx$ 29.1 mm at 100 m) and depend on the target distance. Use the dot for precision and the ring only as a reference for framing.

4.3 Model Identification, Markings and Pre-Use Inspection

Confirm that the product model marking is **QX500B1** and that all control markings are clear, complete and firmly attached. Battery polarity and adjustment directions are governed by the markings on the actual product. Record the serial number before putting the sight into service; it is required for any warranty claim.

Then complete the inspection below before each use. If any item does not meet its acceptance criterion, resolve it before putting the sight into service.

Item	Inspection method	Acceptance criterion
Housing	Visual check and light shake	No visible cracks, impact damage, loose parts or flaking of the finish.
Optics	Visual check of the window	Clean, free of oil, fogging, fungus, fingerprints or contamination.
Button pad	Press each button	Buttons move freely, do not stick, and produce the response in Section 8.
Mount	Visual check and light push	Fully against the rail, lever locked, no looseness.
Battery	Visual check of the compartment	Correct type, sufficient capacity, correct polarity, no foreign objects.
Functions	Short press the buttons	Powers on; brightness levels, NV mode, motion wake-up and low-battery indication work correctly.
Sight picture	Observe through the window	Clear and stable reticle, no visible interference or double image.

5. Battery

The QX500B1 is powered by one CR123A-size battery: either a 3.0 V CR123A primary battery or an approved 3.7 V rechargeable battery of the same size. Battery compartment sealing is part of the IP67 rating, so the cover must always be fully closed and correctly seated.

5.1 Installing the Battery

Step	Operation
1	Confirm that the sight is powered off and point it in a safe direction.
2	Rotate the battery-compartment cover anticlockwise and remove it.
3	Insert one CR123A-size battery according to the polarity marking, with the positive terminal facing inwards.
4	Refit the battery-compartment cover and tighten it clockwise. Do not cross-thread or overtighten it.
5	Short press + or – to power the sight on and confirm that the reticle is displayed steadily.



Figure 5-1 — Battery-compartment cover at the front left of the housing

Install or remove the battery only with the sight powered off and pointing in a safe direction. Do not cross-thread or overtighten the cover, and do not use damaged, leaking or deformed batteries (see 5.2).

5.2 Battery Safety

WARNING

WARNING: never charge a non-rechargeable CR123A battery. Use only an approved 3.7 V rechargeable battery of the same size, charged in a suitable charger. Do not mix batteries of different chemistries, and do not use damaged, leaking or deformed batteries.

- Keep batteries away from fire, high temperatures and water, and out of the reach of children and pets.
- Do not disassemble, crush, impact, short-circuit or modify batteries.
- Remove the battery before long-term storage and keep it in a cool, dry place.
- A reduction in battery capacity below 0 °C is normal and does not indicate a fault.

- If a battery becomes hot, leaks or deforms, stop using it immediately, remove it from the sight, and dispose of it in accordance with local regulations.

5.3 Battery Use and Replacement

- **Replacement criterion:** repeated flashing of the reticle during normal use indicates that the remaining capacity is below 5 %; replace the battery promptly.
- **Replacement method:** power the sight off and replace the battery as described in 5.1; after replacement, confirm that the reticle is displayed steadily.
- **Voltage compatibility:** use a 3.0 V CR123A battery or an approved 3.7 V rechargeable battery of the same size; do not mix batteries of different chemistries.
- **Retained settings:** the last brightness level and brightness mode remain in effect after a battery change.

If the reticle still flashes repeatedly after the battery has been replaced, check that the battery type, polarity and capacity meet the requirements (see 5.1 and 5.2).

5.4 Storage and Transport of Batteries

Store spare batteries in their original packaging, in a dry place at room temperature, and never loose together with metallic objects. For transport, remove the battery from the sight, insulate the terminals and protect it from impact and water. Do not dispose of batteries with household waste; follow the local regulations for recycling or disposal.

6. Mounting to a Picatinny Rail

The quick-detach mount fits MIL-STD-1913 / Picatinny rails. The lever can be released and locked without tools, and the tension adjuster compensates for manufacturing tolerances between rails.



Figure 6-1 — Quick-detach mount: lever with finger grooves, tension adjuster and rail clamp

6.1 Mounting Steps

Step	Operation
1	Confirm that the sight is powered off and that the rail slot is clean and free of burrs.
2	Press the QD release mechanism and swing the lever outwards to unlock the mount.
3	Place the sight in the selected Picatinny rail slot so that the mount sits fully against the rail.
4	Swing the lever inwards to lock the mount. Push the sight lightly to confirm that there is no looseness.
5	If the mount cannot be closed, turn the tension adjuster anticlockwise to increase the clearance.
6	If looseness remains after mounting, open the lever, turn the tension adjuster clockwise, then lock it again and recheck.

6.2 Mounting Check

After mounting, push the sight lightly in all directions to confirm that it does not move and that the lever is fully closed. If it cannot be closed or still moves, adjust the tension as described in steps 5 and 6 and recheck. A mount that is not fully seated against the rail will shift under recoil and invalidate the zero.

Zeroing check. Complete a zeroing check after the first mounting and after every remounting (see 7.4 and 7.5).

6.3 Removal and Remounting

- To remove the sight, press the QD release mechanism and swing the lever outwards; do not force the lever while it is locked.
- When remounting, use the same rail slot as for the first installation; this is a condition of the zero-shift specification.
- Recheck the mounting as described in 6.2 and confirm the zero before use.
- Do not store the sight on a rail while the lever is partly open: the mount can be damaged if the firearm is handled with a loose sight.

7. Zeroing and Adjustment

The sight is zeroed with the elevation and windage adjustment caps on the side of the housing opposite the button pad. Each cap is marked with its correction directions: **U** (up), **D** (down), **R** (right) and **L** (left). The controlled click value is a nominal 0.5 MOA for both axes, with an acceptance tolerance of $\pm 15\%$.

7.1 Preparation

1. Confirm that the firearm is unloaded and pointed in a safe direction, and that the sight is mounted as described in 6.1.
2. Confirm that the mount is locked and the sight does not move.
3. Power the sight on and select a brightness level at which the reticle is clearly visible without excessive blooming.
4. Select a stable support and a target distance appropriate for the firearm and application.

7.2 Adjustment Directions

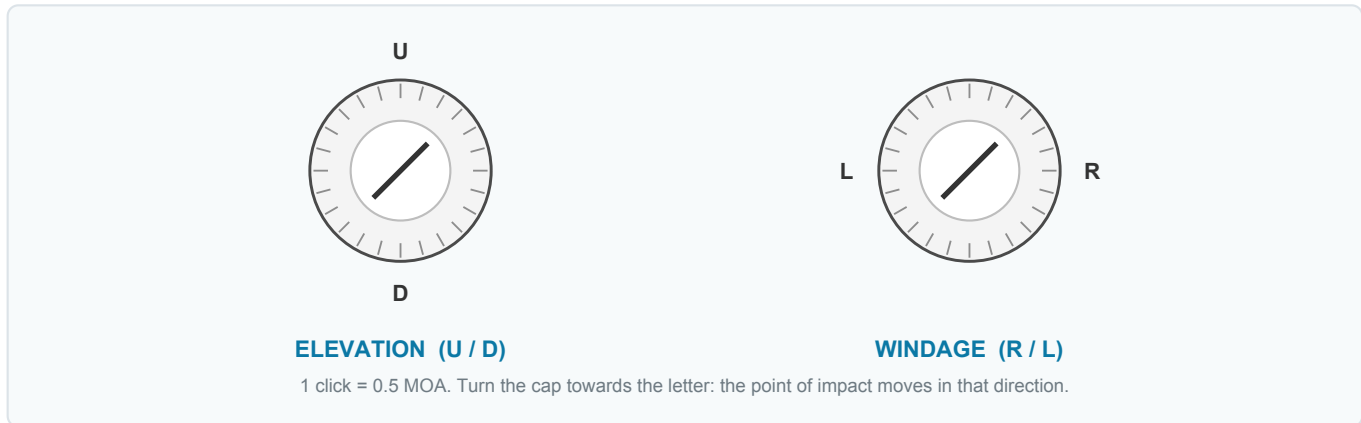


Figure 7-1 — Adjustment directions and click value (schematic)

Point of impact	Correction	Adjustment
Impact low	Move impact up	Turn the elevation knob anticlockwise towards U.
Impact high	Move impact down	Turn the elevation knob clockwise towards D.
Impact left	Move impact right	Turn the windage knob anticlockwise towards R.
Impact right	Move impact left	Turn the windage knob clockwise towards L.

Adjustment note: the adjustment knobs are marked U, D, R and L for up, down, right and left correction. Fire a group to confirm after each small adjustment until the required zero is reached. When finished, refit and tighten the adjustment caps.

7.3 Click Value Reference

The table converts the controlled 0.5 MOA click value into a linear shift at the usual zeroing distances. The values are geometric references; the final zero must be confirmed by live fire.

Zeroing distance	Nominal shift per click	Acceptance tolerance range
25 m	≈ 3.6 mm	3.1 – 4.2 mm
50 m	≈ 7.3 mm	6.2 – 8.4 mm
100 m	≈ 14.5 mm	12.4 – 16.7 mm

Basis of calculation: 1 MOA is approximately 29.1 mm at 100 m; 0.5 MOA is therefore approximately 14.5 mm at 100 m, inside the ± 15 % tolerance band shown above.

7.4 Recommended Zeroing Procedure

Carry out the steps in the table below in order and confirm the result of each step before continuing.

Step	Action	Expected result
1	Mount the QX500B1 securely and confirm that the battery and all controls work.	No looseness; power and brightness control work normally.
2	Set the brightness to a level at which the reticle is clearly visible without excessive blooming.	The reticle is clear with no obvious blooming.
3	Using a stable support, fire a group at the selected zeroing distance.	A readable group is obtained.
4	Determine the centre of the group and adjust elevation and windage according to the markings.	The group centre moves towards the aiming point.
5	Fire another group to confirm and repeat the adjustment only if necessary.	The group centre coincides with the aiming point.
6	Confirm that the adjustment caps are tight and the mount is still locked.	The zero remains stable.

7.5 Repeated-Mounting Check

The acceptance requirement for zero shift, including repeated mounting and removal, is ≤ 1 mil. When remounting, use the same rail slot as for the first installation, fire a group as described in 7.4 and confirm the zero. If the zero shift exceeds the acceptance value, recheck the mounting tension (6.2) and re-zero.

7.6 Optical Surface Quality

The surface quality of the optical window is controlled to a 60/40 scratch / dig grade. If damage or contamination affects the sight picture, stop using the sight, clean it as described in Section 10, or contact service.

8. Buttons and Basic Operation

The sight is controlled by three buttons on the right side of the housing. All functions are available with a short press or a long press; there are no menus.



Figure 8-1 — Button pad: +, - and NV

Button	Sight state	Short press	Long press
+	Off	Power on	—
+	On	Increase brightness by one level	—
–	Off	Power on	—
–	On	Decrease brightness by one level	—
NV	On	Enter / exit night-vision mode	—
+ and – together	On	Power off	—
– and NV together	On	—	Hold for 5 s: enable / disable motion wake-up

8.1 Power On and Power Off

- **Power on:** short press + or –. The reticle lights up at the last brightness level used.
- **Power off:** short press + and – together. The reticle goes out.
- After power-on, confirm that the reticle is displayed steadily and that the brightness level suits the current light conditions.

The brightness level and brightness mode in use are retained after power-off and after a battery change. There is no separate on/off switch.

8.2 Brightness Adjustment

1. Short press + to increase brightness, or – to decrease it.
2. Select a suitable level from the 20 daylight levels or the 10 night-vision levels according to the environment.
3. Confirm that the reticle is clearly visible without obvious blooming, and recheck the level when the ambient light changes.

Set the lowest level at which the reticle is clearly visible and the target remains unobscured. Lower levels extend battery life and reduce the visible signature of the sight to others.

8.3 Night-Vision Mode

Night-vision mode reduces the reticle brightness to a level compatible with image-intensifying night-vision equipment. Short press NV to enter night-vision mode and short press it again to exit; in night-vision mode, use + and – to select one of the 10 night-vision brightness levels.

The lowest night-vision brightness level is intended for use with compatible image-intensifying night-vision equipment and may be difficult to see with the naked eye. This is normal.

8.4 Status Indications

Reticle flashes and display states indicate the current setting or battery state. Use the table below to interpret them.

Indication	Meaning	Action
Reticle flashes 5 times	Motion wake-up is enabled.	No action; to disable it, hold – and NV for 5 s.
Reticle flashes 3 times	Motion wake-up is disabled.	No action; to enable it, hold – and NV for 5 s.
Reticle flashes repeatedly	Remaining capacity is below 5 %.	Replace the battery promptly (see 5.3).
Reticle goes out or asleep	The sight is powered off or in sleep.	Short press + or – to power on; move the sight to wake it (see 9.1).
Reticle clear and steady	The sight is working normally.	No action.

9. Power Saving and Status Functions

The QX500B1 combines motion wake-up, automatic power-off and a low-battery warning to conserve battery capacity without adding switches or menus.

9.1 Motion Wake-Up

The function is enabled or disabled by holding – and NV together for 5 s while the sight is powered on. When motion wake-up is enabled, the reticle enters a low-power sleep state after the sight has been completely stationary for about 5 min; the reticle wakes automatically when the sight is moved.

Operation	Button combination	Confirmation
Enable motion wake-up	Hold – and NV together for 5 s	The reticle flashes 5 times
Disable motion wake-up	Hold – and NV together for 5 s	The reticle flashes 3 times

Expected result: the reticle flashes 5 times when the function is enabled and 3 times when it is disabled; during sleep, moving the sight restores the reticle display.

9.2 Auto Power-Off

The sight powers off automatically after 4 h of continuous inactivity. Short press + or – to power it on again; the previous brightness level and mode remain in effect.

9.3 Low-Battery Indication

When the remaining capacity is below 5 %, the reticle flashes automatically. Replace the battery promptly. If the reticle still flashes after the battery has been replaced, check that the battery type, polarity and capacity meet the requirements (see 5.1 and 5.2).

State distinction. Five flashes or three flashes confirm the motion wake-up setting. Repeated flashing during normal use indicates a low battery.

9.4 Function Check

Item	Check requirement
Power on / off	The sight can be powered on with + or – and powered off with the + and – combination.
Brightness	All 20 daylight and 10 night-vision brightness levels can be selected and the buttons do not stick.
Night-vision mode	NV mode can be entered and exited with a short press of NV.
Motion wake-up	The sight enters sleep after about 5 min of inactivity and the reticle returns when it is moved; the enable / disable confirmation flashes are 5 and 3.
Auto power-off	The automatic power-off function operates after 4 h of continuous inactivity.
Low-battery indication	The reticle flashes when the capacity falls below the specified 5 % threshold.
Reticle	The 1 MOA dot and 68 MOA ring are displayed clearly and steadily, without double images.

10. Maintenance, Storage and Transport

The sight is sealed and contains no user-serviceable parts. Maintenance is limited to cleaning, inspection and the care of the battery and the mount.

10.1 Cleaning and Routine Maintenance

1. Before wiping the optical window, remove loose dust and large particles with a clean soft brush or an air blower.
2. Clean the housing with a soft cloth dampened with a little water or mild soapy water; wipe dry immediately.
3. Clean the window with lens tissue or a clean lens cloth and a suitable optical-grade alcohol. Do not scratch the glass and do not use paper towels.
4. If the sight becomes wet, dry the outer surfaces first and then open the battery compartment; power the sight on only after it is dry.
5. Inspect the battery contacts and the compartment; remove any contamination with a clean, dry cloth before fitting the battery.

CAUTION. Do not use solvents, thinners, abrasives or high-pressure water on the sight. Do not disassemble the housing, the window or the button pad.

10.2 Maintenance Schedule

Interval	Maintenance action
Before each use	Complete the pre-use technical inspection (4.3); confirm that the mount is not loose and the window is clean.
After each use	Wipe the housing and window; if the sight became wet, dry the outer surfaces before opening the battery compartment.
Every 3 months (when not used regularly)	Fit a battery in good condition and carry out a function check (9.4).
Before long-term storage	Remove the battery, store the sight as described in 10.3 and use the standard warehouse packaging.

10.3 Storage

- Remove the battery before long-term storage.
- Keep the sight clean and dry, and protect it from impact, direct sunlight and corrosive substances.
- The standard warehouse storage temperature is 5 °C to 30 °C, with good ventilation and protection against fire and moisture.
- With standard warehouse packaging, the storage life is at least 10 years (excluding the battery).
- Store the sight in its packaging rather than loose in a range bag, to protect the window and the adjustment caps.

10.4 Transport

- Transport the sight in suitable protective packaging and observe all handling markings.
- Protect the packaging from rain, direct sunlight, impact, compression and dropping.
- Remove the battery for air transport when required by the carrier, and insulate the battery terminals.
- If the packaging is damaged, complete an inspection before putting the product into service.

10.5 Safety Summary

WARNING

WARNING. Keep the sight and the battery away from fire, high temperatures and water, and use them only within the specified environmental conditions (– 30 °C ± 2 °C to + 55 °C ± 2 °C). Do not disassemble or modify the optical or electronic assemblies. If the housing, window, mount or battery is damaged, stop using the sight and contact service (Section 13). Never charge a non-rechargeable CR123A battery.

In addition: keep the sight out of the reach of children; do not point the sight at the sun or at any laser source; and never use the sight as a handle or as a lever when mounting or removing it from a firearm.

11. Troubleshooting

If the sight behaves abnormally, work through this section in order. Carry out the checks only in a safe state: the sight points in a safe direction and the firearm is unloaded. If a battery becomes hot, leaks or deforms, or if the housing, window or mount is damaged, stop using the sight.

11.1 Troubleshooting Principles

- **Safety first:** confirm the safe state before any check; stop using the battery immediately if it is abnormal (see 5.2).
- **Outside before inside:** check the battery, the mounting and the window first; never disassemble the sight yourself (see 10.5).
- **Simple before complex:** confirm power, capacity, brightness level and mounting before investigating the zero.
- **Check before adjusting:** adjust the zero only when the power supply and the mounting are both correct (see 7.4).
- **Record everything:** note the symptom, the conditions in which it occurs and the actions already taken, to help the service team (see Section 13).

11.2 Troubleshooting Sequence

Step	Check	Criterion and action
1	Safe state	The sight points in a safe direction, the firearm is unloaded and the battery is not hot, leaking or deformed. If not, confirm safety before continuing and stop using an abnormal battery (5.2).
2	Battery	CR123A-size battery, polarity matching the marking (positive terminal inwards), sufficient capacity, no foreign objects in the compartment. If not, reinstall or replace the battery (5.1, 5.3).
3	Power and mode	A short press of + or – powers the sight on, the reticle lights up and the brightness level suits the environment. If not, follow 8.1 and 8.2 and move the sight to wake it from sleep (9.1).
4	Indication	The number of reticle flashes and the display state match the table in 8.4: 5 or 3 flashes confirm the motion wake-up setting, repeated flashing indicates a low battery.
5	Mounting	The sight sits fully against the rail, the lever is locked and there is no looseness. If not, adjust the tension as described in 6.1 and recheck.
6	Optical window	The window is clean and free of oil, fogging, fungus, fingerprints or damage. If not, clean it as described in 10.1 and stop using the sight if damage affects the sight picture (7.6).
7	Zero	After remounting, the zero shift is ≤ 1 mil. If not, recheck the mounting and re-zero as described in 7.4 and 7.5.
8	Service	All of the above are correct but the sight is still abnormal. Stop using the sight and contact service (Section 13), providing the model, serial number, purchase information and a description of the problem.

11.3 Symptom and Action Reference

Symptom	Possible cause	Action
Reticle flashes repeatedly	Remaining capacity below 5 %.	Replace with one approved CR123A-size battery (5.1, 5.3).
Reticle still flashes after replacement	Incorrect battery type, polarity or capacity.	Check the type and polarity, confirm that the positive terminal faces inwards, and replace the battery if necessary (5.1, 5.2).
Reticle does not light up	Battery not fitted correctly or exhausted, or the sight is powered off or asleep.	Check the battery and its charge; short press + or – to power on; move the sight to wake it (8.1, 9.1).
Sight picture blurred or disturbed	Oil, fogging, fungus, fingerprints or contamination on the window.	Clean the window as described in 10.1; stop using the sight if damage or contamination affects the sight picture (7.6).
Reticle appears doubled or smeared	Brightness set too high for the light conditions.	Reduce the brightness until the reticle is crisp (8.2).
Looseness after mounting	The mount does not sit fully against the rail or the tension is incorrect.	Adjust the tension as described in 6.1, lock it again and recheck.
Zero shift	The zero was not rechecked after remounting or removal.	Recheck and re-zero as described in 7.4 and 7.5, and confirm that the zero shift is ≤ 1 mil.
Housing or window damage	Impact, dropping or compression.	Stop using the sight and contact service (Section 13).
Battery hot, leaking or deformed	Abnormal battery condition.	Stop using the battery immediately and replace it; never use damaged batteries (5.2).

12. Quick Start (First-Time Use)

For first-time use, complete the preparation and settings in the following order and confirm that each function works before putting the sight into service. Details of each step are given in the corresponding sections.

Step	Action	Reference
1	Complete the pre-use technical inspection and confirm the model marking.	4.3
2	Install the battery correctly (one CR123A-size battery, positive terminal inwards) and confirm that the reticle is displayed steadily.	5.1
3	Mount the sight on a Picatinny rail and confirm that it does not move.	6.1, 6.2
4	Select a suitable brightness level; use night-vision mode if required.	8.2, 8.3
5	Complete zeroing and correct the point of impact using the adjustment directions.	7.2, 7.4
6	Confirm that motion wake-up, auto power-off and low-battery indication work.	9.1 – 9.3
7	Carry out routine cleaning and maintenance, and remove the battery before long-term storage.	10.1, 10.3

Note: the actual markings, button positions and display states are governed by the product itself. If any step cannot be completed, do not put the sight into service; contact ERDI service (Section 13).

13. Warranty and Service

ERDI TECH LTD warrants the QX500B1 against defects in material and workmanship under normal use and maintenance for 2 years from the date of delivery. Keep the product packaging, the serial number record and the proof of purchase for any claim.

The warranty does not cover normal wear and tear; damage caused by accident, misuse, improper storage or unauthorised disassembly, modification or repair; damage caused by using a non-approved battery or charger; or transport damage.

For product support, spare parts and warranty service, contact sales@erdi.cn and quote the model (QX500B1) and the serial number marked on the product. For a prompt answer, include photographs of the affected area and a description of the conditions in which the problem occurred.

Legal notice. The QX500B1 is a firearm accessory. It is the user's responsibility to comply with all applicable laws and regulations governing the purchase, possession, transport and use of firearm accessories in the user's country and state.

Battery disposal. Do not dispose of the battery with household waste. Follow local regulations for the recycling or disposal of lithium batteries.

Appendix A — Glossary

Term	Meaning
Holographic sight	A sight that reconstructs a reticle from a recorded hologram, so that the reticle appears at the window and stays aligned with the eye.
Folded optical path	An optical layout in which the light path is folded inside the housing to keep the sight compact while preserving a wide window.
MOA	Minute of angle. 1 MOA subtends about 29.1 mm at 100 m.
Mil	Milliradian. 1 mil subtends about 100 mm at 100 m.
Parallax error	Apparent movement of the reticle relative to the target when the eye moves away from the optical axis.
Click	One increment of adjustment; the controlled click value is a nominal 0.5 MOA.
Zero / zeroing	Adjusting the sight so that the point of impact coincides with the point of aim at a chosen distance.
Zero shift	Change in the point of impact after removing and remounting the sight.
Motion wake-up	A function that wakes the reticle from a low-power sleep state when the sight is moved.
NV mode	Night-vision mode: the reduced set of 10 brightness levels intended for use with image-intensifying equipment.
QD mount	Quick-detach mount: a lever-operated mount that can be locked and released without tools.
IP67	Ingress protection: dust-tight and protected against temporary immersion.

Appendix B — Reference Tables

B.1 Angular size and linear subtension

Angle	25 m	50 m	100 m	200 m
0.5 MOA (1 click)	3.6 mm	7.3 mm	14.5 mm	29.1 mm
1 MOA	7.3 mm	14.5 mm	29.1 mm	58.2 mm
68 MOA (reticle ring)	494 mm	988 mm	1,976 mm	3,952 mm
1 mil	25 mm	50 mm	100 mm	200 mm

The values are geometric conversions of the angular sizes quoted in this manual. They describe angular geometry only; they are not a statement of hit probability or of the effective distance of the sight under field conditions.



QX500B1

HOLOGRAPHIC OPTICAL SIGHT

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