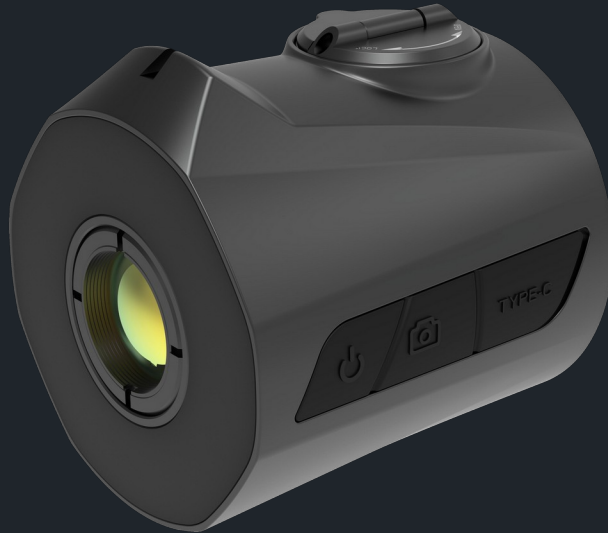


YM500D1

USER MANUAL

THERMAL IMAGING ROUND MINI SIGHT



v1.0 | 2026.10 | ERDI TECH LTD



256 × 192

INFRARED RESOLUTION
12 μ m pixel pitch



1000 g

IMPACT RESISTANCE
0.4 ms; 25 Hz



≤ 700 m

DETECTION RANGE
Human-size target



13.5° × 10.1°

FIELD OF VIEW
13 mm F0.9 lens



52 × 48 × 51 mm

DIMENSIONS
111 g, sight only



45 mm

OLED DISPLAY
1.4-inch, 466 × 466

Detection range is specified for a human-size target under clear weather; see the Technical Specifications for target and test conditions.

1. Product Overview

The YM500D1 is a compact thermal imaging sight designed around a three-in-one concept: mini search, mini aim and mini helmet use. Its round 45 mm display and low-profile housing allow it to be mounted on commonly used handguns and helmets, and it can also be carried and used as a handheld observation unit.

Imaging is provided by a 256 × 192 uncooled infrared detector behind a 13 mm, F0.9 lens. The detector reproduces the thermal signature of a scene, so targets remain visible by day and by night, and in low light where an ordinary optical sight loses contrast. A high-performance AI image processor with detail enhancement sharpens edges and small temperature differences on the 1.4-inch, 466 × 466 OLED display, which measures 45 mm across.

Operation is deliberately simple. Three controls — the power button, the photo/record button and the touch screen — cover power, capture, image mode, reticle, brightness, contrast, zeroing and settings. Menus are opened with a long press on the screen and navigated by swiping, so the sight can be configured without leaving the firing position. The housing is built to withstand 1000 g / 0.4 ms impact, and the sight weighs 111 g with overall dimensions of 52 × 48 × 51 mm.



Figure 1 — YM500D1 thermal imaging round mini sight: 1 battery compartment, 2 lens, 3 buttons, 4 Type-C port

The sight is intended for observation and aiming in the field. Performance depends on the temperature difference between the target and its background, on atmospheric transmission and on the distance to the target; read Section 3 for the conditions under which the specification values apply.

2. Product Features

- High-sensitivity 256 × 192 uncooled infrared detector with 12 μm pixel pitch.
- 1.4-inch, 466 × 466 OLED touch display, 45 mm across, for a large and open sight picture.
- High-performance AI chip with image detail enhancement for clear target rendering.
- Ergonomic round housing operated by touch and by button, with or without gloves.

- Multiple image modes and reticles switched quickly with a finger swipe.
- High reliability: 1000 g / 0.4 ms impact resistance, 111 g total weight.

Five image modes (black hot, white hot, red hot, green hot and iron red hot) and adjustable reticle size and color allow the picture to be matched to the background and to personal preference. Photo capture and on-board video recording are available at any time from the photo/record button.

3. Technical Specifications

Table 1 — Technical specifications

No.	Parameter	Specification
1	Detector type	Uncooled focal plane array (FPA)
2	Detector resolution	256 × 192
3	Pixel pitch	12 μm
4	Spectral range	8 – 14 μm
5	Frame rate	25 Hz
6	Lens	13 mm, F0.9
7	Field of view	13.5° × 10.1°
8	Detection range	≤ 700 m (see notes)
9	Display	1.4-inch OLED, 466 × 466
10	Display diameter	45 mm
11	Image modes	Black hot / white hot / red hot / green hot / iron red hot
12	Brightness adjustment	Yes — image, reticle and screen brightness
13	Contrast adjustment	Yes
14	Reticle	Adjustable size and color
15	Zeroing	On-screen X / Y correction
16	Hotspot tracking	Yes, switchable
17	Bright-light protection	Yes, switchable
18	Photo capture	Yes
19	Video recording	On-board recording
20	Storage	USB storage, accessible over Type-C
21	External power	DC 5 V over USB Type-C (does not charge the cell)
22	Battery	16340 rechargeable cell (2 supplied)
23	Battery life	≥ 4 h at 25 °C
24	Impact resistance	1000 g / 0.4 ms

No.	Parameter	Specification
25	Weight	111 g
26	Dimensions	52 × 48 × 51 mm
27	Operating temperature	−20 °C to +50 °C
28	Storage temperature	0 °C to +55 °C
29	Storage humidity	≤ 80 % RH
30	Mounting	Acro bracket (supplied); Picatinny, RMR and helmet mounts optional

Notes: 1) Detection range depends on target size and emissivity, atmospheric transmission and background temperature. 2) Values are typical at 25 °C unless otherwise stated. 3) Specifications are subject to change without notice; the delivered configuration prevails.

4. Components and Controls

The main components are numbered in Figure 1. Figure 2 shows the control panel on the right side of the housing, where the two buttons and the Type-C port are grouped.

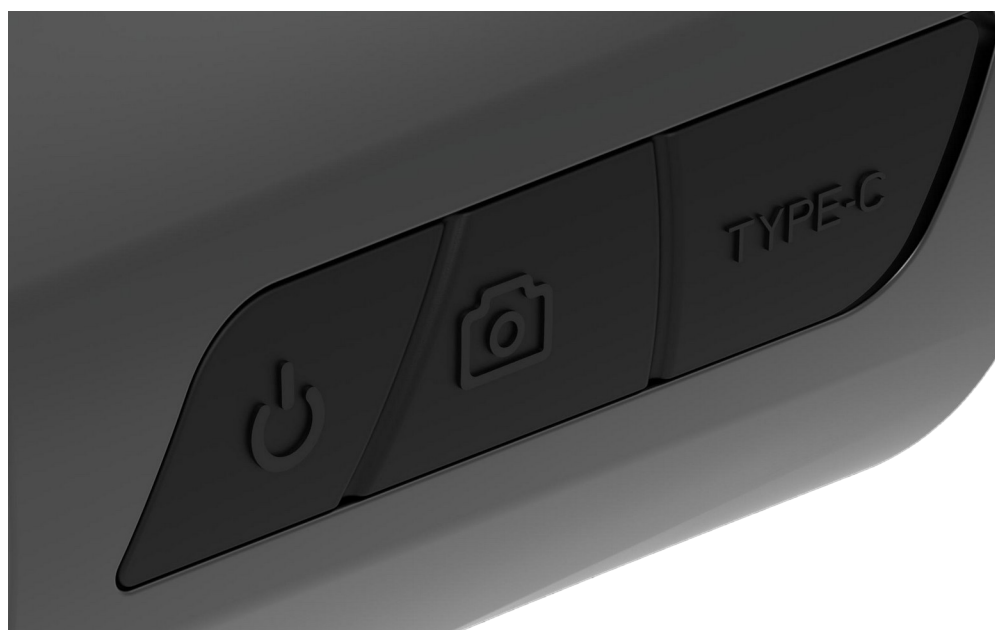


Figure 2 — Control panel: power button, photo/record button and Type-C port

Table 2 — Components and their functions

Part	Location	Function
Battery compartment	Cap on the top of the housing	Holds one 16340 rechargeable cell; marked LOCK / OPEN.
Lens	Front of the housing	13 mm, F0.9 infrared objective. Do not touch the optical surface.
Power button	Front of the control panel	Long press to switch on or off; short press for image (shutter) correction.

Part	Location	Function
Photo/record button	Middle of the control panel	Short press to take a photo; long press to start or stop video recording.
Touch screen	Round 45 mm OLED display	Long press to open the menu; swipe for image mode, reticle size and color; double-tap to change the zoom level.
Type-C port	Rear of the control panel	External DC 5 V power supply and USB connection to a PC.

5. Button and Touch Control

The sight is operated with two buttons and the touch screen. The table below summarizes every action available from the controls.

Table 3 — Button and touch control summary

Control	Short press / gesture	Long press
Power button	Image (shutter) correction	Switch the sight on or off
Photo/record button	Take a photo	Start or stop video recording
Touch screen	Swipe left / right: image mode Swipe up: reticle size Swipe down: reticle color Double-tap: zoom level	Open the menu

Note When the sight is switched off, a long press of the power button switches it on. Switch the sight off before removing or installing the battery; removing the cell while the sight is on may damage the device.

6. Packing List

Table 4 — Standard components

No.	Item	Quantity
1	Sight body (YM500D1)	1
2	Acro bracket	1
3	M3 × 6 countersunk screw	3
4	Allen wrench	1
5	16340 rechargeable cell	2
6	Type-C data cable	1
7	Lens cloth	1
8	User manual	1
9	Warranty card	1

Optional mounting brackets are available to adapt the sight to different hosts and equipment. The brackets below are supplied only when ordered; the packing list of the shipment prevails.

Table 5 — Optional mounting brackets

No.	Part name	Application	Reference image
1	Picatinny side-mount bracket (90°)	Side rail mounting	
2	Picatinny quick-release bracket	Picatinny rail, quick release	
3	RMR base	RMR footprint	
4	Handheld stand	Handheld observation	
5	Helmet bracket	Helmet mounting	

7. Preparation

7.1 Unboxing

- (1) Unpack the equipment box and check the contents against Table 4.
- (2) Inspect the lens, housing, buttons and bracket for obvious damage in transit.
- (3) Check that the infrared lens and the display window are clean; if there are stains, wipe the lens with the supplied lens cloth.
- (4) Make sure the supplied 16340 cells are charged before first use.

7.2 Battery Installation

The YM500D1 is powered by one 16340 rechargeable cell. Install the cell as follows:

- (1) Switch the sight off.
- (2) Turn the battery compartment cap on the top of the housing to the OPEN position and lift it off.
- (3) Insert one 16340 cell with the polarity shown on the label of the battery compartment. Do not install the cell backwards.
- (4) Refit the cap and turn it to LOCK. Check that the cap is fully seated and the seal is not pinched.



Figure 3 — 16340 rechargeable cell

7.3 Battery Precautions

- Switch the sight off before removing or installing the cell. Opening the compartment or removing the cell while the sight is on may cause serious damage.
- Do not disassemble, drop or short-circuit the cell.
- Stop using a cell immediately if it becomes overheated, discolored, deformed or gives off an odor during use, charging or storage.
- Do not mix cells of different types or states of charge, and observe the polarity markings.
- Remove the cell if the sight is not to be used for a long period, to avoid leakage.

8. Mounting

8.1 Standard Acro Bracket

The sight is supplied with an Acro bracket, three M3 × 6 countersunk screws and an Allen wrench. Use them as follows:

- (1) Place the bracket on the mounting face of the sight and align the three screw holes.
- (2) Insert the three M3 × 6 countersunk screws and tighten them evenly with the Allen wrench. Do not over-tighten.
- (3) Seat the bracket on the host interface and lock it in place.
- (4) Check that the sight is firmly attached and cannot be moved by hand before use.

8.2 Optional Brackets

For other host interfaces, use the appropriate optional bracket listed in Table 5: the Picatinny side-mount bracket (90°), the Picatinny quick-release bracket, the RMR base, the handheld stand or the helmet bracket. Fit the bracket to the sight with the same three screws, then mount the assembly on the host.

Note The mounting interface and the tightening method are determined by the host. Confirm that the bracket is correct for the host before firing, and re-check the fasteners after the first use.

8.3 Checks Before Use

- Housing: no cracks, dents or other visible damage.
- Lens and display window: clean and free of oil, stains and scratches.
- Bracket: seated, screws tight, no movement of the sight on the host.
- Battery: charged, correct polarity, cap locked.
- Function: the sight switches on, the image is stable and the reticle is visible.
- Marking: the model and serial marking are complete and legible.

9. Operation

The sight is in the off state when delivered. Press and hold the power button to switch it on; the start-up screen appears, followed by the live thermal image. Press and hold the power button again to switch the sight off.

9.1 Start-Up and Main Interface

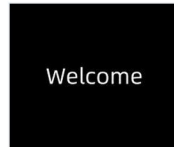


Figure 4 — Start-up screen

When the sight is on and the main interface is displayed, long press the screen to open the menu. The status elements of the main interface are shown in Figure 5 and listed in Table 6.

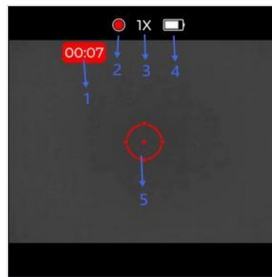


Figure 5 — Main interface with status indicators

Table 6 — Main interface indicators

No.	Indicator	Meaning
1	Recording time	Elapsed recording time
2	Recording in progress	A recording is running
3	Electronic amplification	Current zoom level
4	Battery	Remaining battery capacity
5	Reticle	Aiming reticle; size and color are adjustable

9.2 Image Mode

With the sight on and the main interface displayed, swipe left or right to change the image mode until the best display effect is obtained. Five modes are available: black hot, white hot, red hot, green hot and iron red hot.

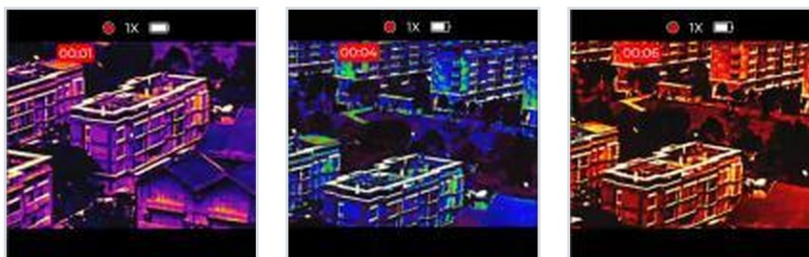


Figure 6 — Image modes selected with a left or right swipe

9.3 Reticle Size and Color

Swipe up on the main interface to change the size of the reticle, and swipe down to change its color.



Figure 7 — Reticle size adjustment

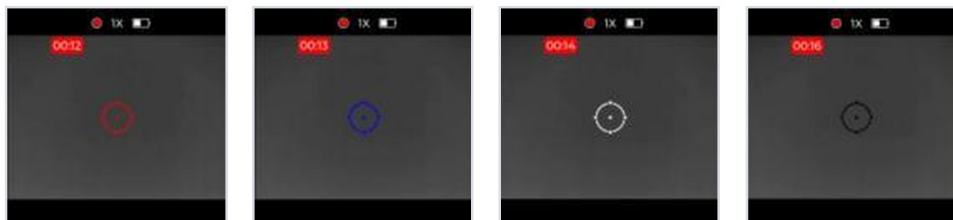


Figure 8 — Reticle color adjustment

9.4 Brightness and Contrast

Long press the screen to enter the menu, then swipe to Brightness. Tap the icon to adjust the screen brightness. Three brightness settings are available: image brightness, reticle brightness and screen brightness. Tap the + / - signs or slide the progress bar to adjust.

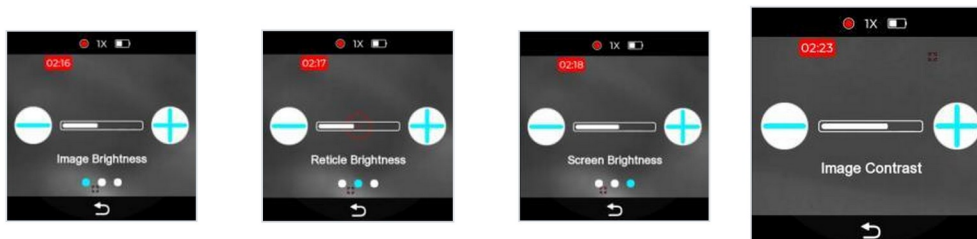


Figure 9 — Brightness settings for the image, the reticle and the screen, and image contrast

After entering the menu, swipe to Image Contrast. Tap the icon to adjust the contrast of the image, then tap the + / - signs or slide the progress bar.



Figure 10 — Menu icons: brightness, contrast, zeroing, hotspot tracking, bright-light protection and settings

9.5 Zeroing

After entering the menu, swipe to Zeroing and tap the icon to start the zeroing operation. Tap the X or Y key to select horizontal or vertical correction, then tap or long press the + / - button to correct the point of aim. When the correction is complete, confirm the prompt to save the zeroing setting.



Figure 11 — Zeroing screen, correction keys and save prompt

9.6 Hotspot Tracking

After entering the menu, swipe to Hotspot Tracking and tap the icon to switch the function on or off. When the function is on, the hottest point in the scene is marked on the display.

9.7 Bright-Light Protection

After entering the menu, swipe to Bright Light Protection and tap the icon to switch the function on or off. Bright-light protection protects the detector when very bright heat sources are in the field of view.

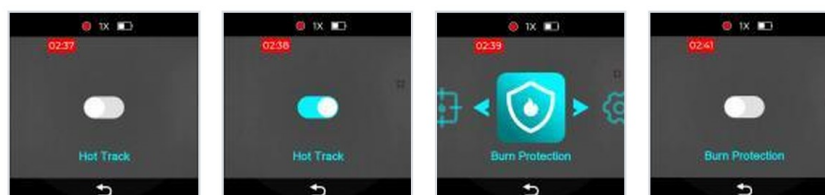


Figure 12 — Hotspot tracking and bright-light protection

9.8 Photo and Video Recording

A short press of the photo/record button takes a photo. A long press starts video recording; the recording time is shown in the upper left corner of the display. Press and hold the button again to stop recording. Photos and videos are stored in the internal USB storage and can be copied to a PC over the Type-C port.

9.9 Settings

After entering the menu, swipe to Settings and tap the icon to set the automatic shutdown time, view device information, restore factory settings, set the date and time, and select the language.



Figure 13 — Settings screens: auto off, about, date and time, language

Table 7 — Settings menu

Item	Function
Auto off	Sets the time after which the sight switches off automatically (5 to 60 minutes in the supplied firmware).
About	Displays device information, including the serial number and firmware version.
Factory reset	Restores all settings to the factory defaults; confirm the prompt to proceed.
Date & time	Sets the date, the time and the date format.
Language	Selects the menu language; English is the default setting.

9.10 External Power and USB Connection

The sight supports a Type-C connection to external devices:

- An external DC 5 V supply can power the sight through the Type-C port. The port does not charge the internal cell.
- The sight can be connected to a PC; the USB storage device is then available and the images and videos folders can be opened to view or copy photos and videos.
- The USB storage device can be accessed from a PC to manage the memory.

10. Maintenance and Cleaning

Maintenance should be carried out at least twice a year and includes the following work.

- Wipe the outer surfaces of the metal and plastic parts with a clean, soft cloth moistened with water, soapy water or alcohol, in order to remove dirt and dust.

- Check the surface of the lens. First remove large particles with an air blower or another non-contact method, then clean the optical surface carefully with professional lens paper and solvent.
- Clean the battery compartment with a suitable organic solvent.
- If the sight is not used for a long period, switch it on for a functional check every three months.

10.1 Non-Optical Surfaces

If necessary, wipe the non-optical surfaces of the product with a clean, soft cloth. Do not use abrasive cleaners, acids or strong alkalis on the housing or on the markings.

10.2 Optical Surfaces

Avoid soiling the optical surface of the lens during use. Do not touch the lens with the hands: sweat leaves marks on the glass and may corrode the optical coating. When the lens surface becomes contaminated, wipe it carefully with professional lens paper. Do not wipe the lens dry with a rough cloth.

Note Never clean the optical surfaces with abrasive material. Do not use solvents that attack the coating, and do not disassemble the sight; disassembly voids the warranty.

11. Troubleshooting

The table below lists the faults that may be corrected by the user. If a fault persists after the action shown, stop using the sight and contact the supplier.

Table 8 — Troubleshooting

Symptom	Possible cause	Action
The sight does not switch on	Cell discharged; cell installed with reversed polarity	Charge or replace the cell; check the polarity marking in the battery compartment.
The image is blurred or shows abnormal noise	Lens contaminated; image correction required	Clean the lens; short press the power button to perform an image (shutter) correction.
The reticle is not visible	Reticle brightness set too low	Open the menu, select Brightness and raise the reticle brightness.
The battery icon is empty and flashes	Cell nearly exhausted	Replace the cell, or power the sight from an external DC 5 V supply over Type-C.
The touch screen does not respond	Screen contaminated or wet	Clean and dry the screen; switch the sight off and on again.
Recording does not start	Storage full	Copy the files to a PC over the Type-C port and delete files that are no longer needed.
The date and time are wrong	Clock not set	Open Settings, select Date & Time and set the date, the time and the format.
The sight cannot be switched off	Button pressed too briefly	Press and hold the power button until the display switches off.

Note Do not open the housing or attempt repairs yourself. Unauthorized repair damages the sealing and the optical alignment, and voids the warranty.

12. Transport and Storage

12.1 Transport

The packed product may be transported by road, rail or air. The quality of the shipment and the safety requirements of the transport process comply with the regulations of the international transport authorities.

- Load and unload the product carefully, by any method, so that safety and reliability are maintained.
- Observe the fire-prevention, waterproofing and moisture-proofing regulations during shipment.
- Do not transport flammable, explosive or corrosive materials in the same vehicle.
- Avoid collisions and strong vibration during transport.

12.2 Storage

Store the product in a dry, well-ventilated environment free of corrosive gases, at a temperature of 0 °C to +55 °C and a relative humidity of no more than 80 %.

Store the sight in its case when it is not in use, and remove the cell if the sight is to be stored for a long period. Switch the sight on for a functional check every three months during storage.

13. Safety Warnings and Precautions

Read this section before using the sight. The precautions below must be observed at all times.

- Do not use or store the sight in environments that exceed the permitted operating or storage temperatures.
- Do not point the sight directly at sources of high-intensity heat radiation, such as the sun, lasers or welding machines.
- Do not use the sight in dusty or humid environments; if the sight becomes wet, dry it immediately.
- Do not strike, throw or vibrate the sight or its accessories.
- Do not remove or install the cell while the sight is switched on.
- Do not disassemble the sight. Disassembly damages the equipment and voids the warranty.
- Keep the sight away from fire, and keep the cell away from high temperature and flame.
- When the sight is mounted on a firearm, follow the firearm safety rules of the range or unit at all times, and confirm that the sight is firmly mounted before firing.

Compliance This product may be subject to export control or dual-use regulations. Before export, re-export or transfer, confirm the requirements of the destination country or region, the end user and the end use, and obtain the applicable licenses.

The contents of this manual are subject to change without notice. The appearance and the interface of the product are subject to the delivered version.