

YM500D1 · A ROUND-FORMAT MINI THERMAL SIGHT BUILT AROUND A 256 X 192 UNCOOLED DETECTOR, 13 MM F0

YM500D1 1x Round Mini Thermal Imaging Sight

A round-format mini thermal sight built around a 256 x 192 uncooled detector, 13 mm F0.9 lens and a 45 mm 466 x 466 OLED display. Designed for mini search, mini aim and mini helmet use, the YM500D1 also works as a handheld observation unit and records stills and video.



DETECTOR
256 × 192 · 12 μm

DETECTION RANGE
≤ 700 m

DISPLAY
1.45 in · 466 × 466

WEIGHT / MOUNT
111 g · Acro

YM500D1 at a glance

The YM500D1 is a compact round-format thermal imaging sight designed around a three-in-one concept: mini search, mini aim and mini helmet use. Its 45 mm round 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 a 1,000 g / 0.4 ms impact, and the sight weighs 111 g with overall dimensions of 52 × 48 × 51 mm.

Key features

- **Three-in-one concept:** mini search, mini aim and mini helmet use, plus handheld observation.
- **256 × 192 uncooled infrared detector** with 12 µm pixel pitch and a spectral range of 8–14 µm.
- **13 mm F0.9 lens**, 13.5° × 10.1° field of view and a 25 Hz frame rate.
- **1.4-inch, 466 × 466 OLED touch display**, 45 mm across.
- **AI image processor** with detail enhancement for target rendering.
- **Five image modes** and adjustable reticle size and colour.
- **Photo capture and on-board video recording.**
- **USB storage over Type-C** for copying photos and videos to a PC.
- **1000 g / 0.4 ms impact resistance** and 111 g total weight.
- **Acro bracket supplied;** Picatinny, RMR and helmet mounts are optional.
- **Detection range ≤ 700 m** as stated for a human-size target under clear weather conditions (see conditions below).

Technical specifications

Values are transcribed from the YM500D1 controlled user manual, version 1.0. Values are typical at 25 °C unless otherwise stated. This page is a product reference, not an independent test report or certification.

Detector and optics

PARAMETER	VALUE	CONDITION / NOTE
Detector type	Uncooled focal plane array (FPA)	—
Detector resolution	256 × 192	Detector pixels, not display pixels
Pixel pitch	12 µm	—
Spectral range	8–14 µm	—
Frame rate	25 Hz	—
Lens	13 mm, F0.9	—
Field of view	13.5° × 10.1°	—
Detection range	≤ 700 m	Human-size target under clear weather; see notes

Display and imaging

PARAMETER	VALUE	CONDITION / NOTE
Display	1.4-inch OLED, 466 × 466	—
Display diameter	45 mm	—
Image modes	Black hot / white hot / red hot / green hot / iron red hot	—
Brightness adjustment	Yes — image, reticle and screen brightness	—
Contrast adjustment	Yes	—
Reticle	Adjustable size and colour	—
Zeroing	On-screen X/Y correction	—
Hot-spot tracking	Yes, switchable	—
Bright-light protection	Yes, switchable	—
Photo capture	Yes	—
Video recording	On-board recording	—
Storage	USB storage, accessible over Type-C	—

Power, physical and environmental

PARAMETER	VALUE	CONDITION / NOTE
External power	DC 5 V over USB Type-C	Does not charge the cell
Battery	16340 rechargeable cell (2 supplied)	—
Battery life	≥ 4 h at 25 °C	—
Impact resistance	1,000 g / 0.4 ms	—
Weight	111 g	—
Dimensions	52 × 48 × 51 mm	—
Operating temperature	−20 °C to +50 °C	—
Storage temperature	0 °C to +55 °C	—
Storage humidity	≤ 80 % RH	—
Mounting	Acro bracket (supplied); Picatinny, RMR and helmet mounts optional	—

How the round mini thermal sight works

The YM500D1 uses an uncooled focal-plane array to detect long-wave infrared radiance from the scene. The 13 mm F0.9 lens forms an image on the 256 × 192 detector, and the electronics convert the signal into a visible image on the 45 mm round OLED display. Because the image is formed from thermal radiance rather than reflected visible light, targets can remain visible in low light or darkness when their temperature differs from the background.

Five image modes (black hot, white hot, red hot, green hot and iron red hot) let the user match the display to the scene and personal preference. The AI image processor applies detail enhancement to sharpen edges and small temperature differences. Hot-spot tracking highlights the warmest region; bright-light protection is switchable.

The round 45 mm display and low-profile housing are intended to support mini search, mini aim and mini helmet use, as well as handheld observation. The sight is an imaging and aiming aid, not a calibrated radiometric thermometer.

Performance conditions and limits

- **Detection range** is stated as ≤ 700 m for a human-size target under clear weather. It depends on target size and emissivity, atmospheric transmission and background temperature.
- **Thermal contrast** depends on target-to-background temperature difference. Low-contrast scenes may show little detail even when the detector is working correctly.
- **Atmospheric transmission** is reduced by fog, heavy rain, dust and smoke. Thermal imaging can help in some obscurants, but it does not guarantee seeing through every one.
- **Ordinary glass** blocks much of the long-wave infrared band, so the sight generally cannot image through a closed window or glass barrier.
- **Battery life** is at least 4 h at 25 °C; recording, display brightness and low temperature reduce it. The Type-C external supply powers the sight but does not charge the cell.
- **Impact resistance** (1,000 g / 0.4 ms) is a stated test value, not a guarantee for every host, mount or installation.
- **Storage humidity** is a storage condition, not an operating-humidity or ingress rating.

Intended use and application scenarios

The YM500D1 is intended for observation and aiming in the field. Its supplied documentation describes a three-in-one concept: mini search, mini aim and mini helmet use, with handheld observation as an additional mode. It is an aiming and observation aid, not a replacement for safe firearm handling or marksmanship training.

- **Mini search and observation** of heat-emitting targets in low light or darkness.
- **Compact aiming** on handguns, helmets and other compatible hosts using the supplied Acro bracket or optional mounts.
- **Helmet-mounted observation** where the optional helmet mount and host configuration are compatible and lawful.
- **Handheld field observation** using the round 45 mm display and touch controls.
- **Field documentation** with still photos and on-board video, copied to a PC over Type-C.
- **Sport shooting, hunting where lawful, training and professional use** on compatible hosts.

Application examples describe configuration possibilities, not a guarantee of detection, identification, hit probability or legality in a particular jurisdiction. Confirm local law and the host/mount compatibility before use.

Mounting, power and configuration

The supplied Acro bracket is the standard mount. Picatinny, RMR and helmet mounts are optional; the mounting interface of the host equipment and the delivery documents of the mounting parts govern compatibility. Confirm that the host and mount are mechanically sound and that the sight cannot move before use.

Power is supplied by two 16340 rechargeable cells. The Type-C port accepts DC 5 V external power and provides USB storage access to a PC; it does not charge the internal cell. The supplied manual gives the complete battery, menu, gesture, zeroing and inspection procedure; this page intentionally does not reproduce operating instructions.

Confirm the image mode, reticle, brightness and zero for the intended environment, and re-check zero after mounting or changing the host configuration.

Care, storage and safety

- Wipe outer metal and plastic surfaces with a clean, soft cloth moistened with water, soapy water or alcohol to remove dirt and dust.
- Remove large particles from the lens with an air blower or another non-contact method, then clean the optical surface carefully with professional lens paper and solvent. Do not wipe the lens dry with a rough cloth.

- Clean the battery compartment with a suitable organic solvent. Do not use abrasive cleaners, acids or strong alkalis on the housing or markings.
- If the sight is not used for a long period, switch it on for a functional check every three months and remove the cells for storage.
- Store in a dry, well-ventilated environment free of corrosive gases at 0 °C to +55 °C and no more than 80 % RH. Keep the sight in its case when not in use.
- Do not disassemble the sight. Disassembly damages the equipment and voids the warranty. Do not strike, throw or vibrate the sight or its accessories.
- Do not point the sight directly at sources of high-intensity heat radiation such as the sun, lasers or welding machines. Do not use it as solar-viewing equipment.
- Keep the sight away from fire, and keep the cells away from high temperature and flame. Do not dispose of lithium cells with household waste; follow local recycling and disposal rules.

Ordering, stock and dispatch

Prices below are published B2B unit prices in USD, shipping included to the address entered at checkout. Insurance, import duties, taxes and clearance fees are excluded. The server reconfirms the selected quantity tier before PayPal approval; no prior quotation or PI is required for eligible online orders.

QUANTITY	UNIT PRICE (USD)	DISPATCH AFTER VERIFIED PAYMENT
1–10 pcs	659	1–100 pcs: stock basis 100 pcs; dispatch within 7 working days
11–100 pcs	599	1–100 pcs: stock basis 100 pcs; dispatch within 7 working days
101–500 pcs	459	101–500 pcs: 45 working days
501–1,000 pcs	429	501+ pcs: 60 working days
1,001+ pcs	400	501+ pcs: 60 working days

Dispatch days are working days counted from verified payment. The stock basis is 100 pcs for the in-stock band. Larger quantities are produced to order. Shipping is included to the shipping address entered at checkout; the terms shown in the cart and order confirmation govern the accepted order.

Frequently asked questions

▼ What does “three-in-one” mean for the YM500D1?

The supplied documentation describes mini search, mini aim and mini helmet use in one compact round sight. It can also be carried and used as a handheld observation unit.

▼ What are the detector and lens specifications?

256 × 192 uncooled FPA, 12 µm pixel pitch, 8–14 µm spectral range, 25 Hz frame rate, 13 mm F0.9 lens and a 13.5° × 10.1° field of view.

▼ What is the display?

A 1.4-inch OLED display with 466 × 466 resolution and a 45 mm display diameter.

▼ How far can it detect a target?

The stated detection range is ≤ 700 m for a human-size target under clear weather. It depends on target size and emissivity, atmospheric transmission and background temperature.

▼ What battery does it use and how long does it run?

Two 16340 rechargeable cells, with at least 4 hours of operation at 25 °C. Recording, display brightness and low temperature reduce runtime.

▼ Does the Type-C port charge the battery?

No. The Type-C port provides DC 5 V external power and USB storage access; the manual states that it does not charge the cell.

▼ Can it record photos and video?

Yes. A short press of the photo/record button takes a photo; a long press starts or stops on-board video recording. Files are stored in the internal USB storage and can be copied to a PC over Type-C.

▼ What mounts are available?

An Acro bracket is supplied. Picatinny, RMR and helmet mounts are optional; the host interface and the mounting-part documents govern compatibility.

▼ How much does it weigh?

111 g, with overall dimensions of 52 × 48 × 51 mm. The manual does not state whether the cells and mount are included in the weight.

▼ What environmental limits apply?

Operating temperature –20 °C to +50 °C, storage 0 °C to +55 °C and ≤ 80 % RH, and impact resistance 1,000 g / 0.4 ms. Storage humidity is a storage condition, not an operating or ingress rating.

▼ Does it measure temperature?

No. The YM500D1 is an imaging and aiming sight, not a calibrated radiometric thermometer. Its modes display relative thermal contrast, not a certified temperature reading.

▼ Can a thermal sight see through glass?

Ordinary glass blocks much of the long-wave infrared band used by thermal imagers, so the sight generally cannot image through a closed window or glass barrier. Confirm the optical path in the intended installation.

▼ What is the warranty?

Warranty terms are as stated in the sales contract and the delivery documents. Damage caused by failure to observe the manual, disassembly, unauthorised modification, accident or improper storage is not covered.

▼ What is the price and lead time?

Published unit prices are USD 659 (1–10), 599 (11–100), 459 (101–500), 429 (501–1,000) and 400 (1,001+), shipping included. In-stock quantities (1–100 pcs, stock basis 100 pcs) dispatch within 7 working days after verified payment; 101–500 pcs dispatch in 45 working days and 501+ pcs in 60 working days.

▼ Can I download the user manual?

The product datasheet on this page summarises the controlled model data. The complete user manual is supplied with the product; contact sales@erdicn.com for a configuration-matched copy or service documentation.

References and evidence boundaries

The model-specific values on this page come from the ERDI controlled product document. The external references below explain general thermal-imaging and safety science; they do not test, certify or endorse the YM500D1.

1. ERDI TECH LTD, *YM500D1 Thermal Imaging Round Mini Sight — User Manual*, version 1.0. Model-specific source for the values and care statements on this page (not a public download).
2. NASA Science, [Infrared Waves](#). General background on infrared radiation; not a product specification.
3. M. Vollmer & K.-P. Möllmann, [Infrared Thermal Imaging: Fundamentals, Research and Applications](#), Wiley (2010). General thermal-imaging physics; not a test of this sight.
4. NIST, Lane & Whiteman, [NISTIR 8098 — Calibration and Measurement Procedures for a High Magnification Thermal Camera](#) (2016). Thermography calibration and uncertainty; not a product certification.
5. International Organization for Standardization, [ISO 18434-1:2008 — Condition monitoring and diagnostics of machines — Thermography — Part 1: General procedures](#). General thermography framework; no compliance claim is made.
6. International Electrotechnical Commission, [IEC 60529 — Degrees of protection provided by enclosures \(IP Code\)](#). Defines the IP code; does not certify this product.

7. International Electrotechnical Commission, IEC 62133-2:2017 — Secondary cells and batteries containing alkaline or other non-acid electrolytes — Safety requirements for portable sealed secondary lithium cells and batteries. General battery-safety standard; no product compliance claim is made.
8. International Commission on Non-Ionizing Radiation Protection, ICNIRP Guidelines on Limits of Exposure to Incoherent Visible and Infrared Radiation, *Health Physics* 105(1), 2013. General optical-radiation safety guidance; not a product classification.
9. European Union, Regulation (EU) 2021/821 — dual-use export controls. General export-control framework; not a legal determination for a particular transaction.

Warranty, compliance and contact

Warranty terms are as stated in the sales contract and the delivery documents. Damage caused by failure to observe the manual, disassembly, unauthorised modification, accident or improper storage is not covered. Keep the packaging and delivery documents for any claim.

The YM500D1 is a firearm accessory. The buyer and user are responsible for compliance with all applicable laws governing purchase, possession, transport and use. Thermal imaging and firearm accessories may be subject to export-control or dual-use rules; the manual explicitly notes that the product may be subject to export-control or dual-use regulations. Confirm the destination, end user and end use before export, re-export or transfer, and obtain any required licence. This page is not legal advice.

Technical support, spare parts and warranty service: sales@erdicn.com. Quote the model (YM500D1) and the serial number marked on the product.