



HANDHELD THERMAL IMAGING



MATRIX / MARTIX LRF

Predator Thermal Optics



1.Lens Cover	2.Lens Focusing Ring	3.Power ON/OFF Button
4.Navigation UP Button	5.MENU Button	6.Navigation DOWN Button
7.LED Indicator (GREEN = Power On, RED = Charging)	8.Eyepiece Focusing Ring	9.Red Laser Pointer
10.Laser Rangefinder	11.Data Compartment	12.Hand Strap
13.Objective Lens	14.Eyepiece Lens	15.Battery Cap (Make sure to tighten the battery cover before using the device)

| In The Box

- Handheld Thermal Monocular
- 18650 Lithium Batteries
- Type-C Cable
- 5V 2A Adapter
- Manual
- Hand Strap

| Quick Start

Installing The Battery

- Please use Predator Thermal Optics Lithium re-chargeable 3.7V flat top 18650 batteries.
- Remove battery compartment cap and insert the battery with the positive end in the device first. Put the battery cover cap back on and screw until fully tight. (Failure to do so may result in restarting!)

Power On and Image Settings

- Hold the power (ON/OFF) button (3) for 3 seconds to power on.
- Rotate the eyepiece focusing ring (8) to get a clear image of the icons on the display.
- Rotate the lens focusing ring (2) to get a clear image of the observed object.
- Press the navigation UP button (4) to select the operating modes (White Hot, Black Hot,

Sky Mode, Red Hot, Fusion).

- Press the navigation DOWN button (6) to select digital magnification (1x , 2x , 4x , 8x).
- Press the MENU button (5) to enter the menu to select the appropriate parameters.
- Hold the power (ON/OFF) button (3) for 3 seconds to power off. The LED indicator will be turned off after the device is powered off. Short press to put into standby mode.

Buttons



Power (ON/OFF) Button

Hold the power (ON/OFF) button (3) for 3 seconds to power off. The LED indicator will be turned off after power off.

Hold the power (ON/OFF) button (3) for 1-3 seconds to go into sleep mode. The LED indicator will be green when the device is in sleep mode. Wake the device by pressing the power (ON/OFF) button.

**Press the power button to refresh the device.*



↑ Navigation UP Button

In menu mode:

Press to switch menu items upwards.

When not in menu mode:

Press to change the operating modes.

Hold 1~3s to take a picture ; Hold 3s to start/stop recording



MENU Button

In menu mode:

Press to confirm selection.

Hold to exit main menu or submenu.

When not in menu mode:

Press to enter menu mode.

Hold to turn on or off the red laser pointer.



↓ Navigation DOWN Button

In menu mode:

Press to switch menu items downwards.

When not in menu mode:

Press to change set-up zoom 1x,2x,4x,8x

Hold to turn on/off rangefinder

Menu Function

Detailed Functions

1. Operating Modes

Options: "White Hot"/"Sky Mode"/"Black Hot"/"Red Hot"/"Fusion"

Default mode is "White Hot"



White Hot



Sky Mode



Black Hot



Red Hot



Fusion

2. Video Output

Options: "On"/"Off"

The video output function CVBS will be on/off accordingly.

3. WiFi

Options: "On"/"Off"

Turn on WiFi on both the device's Menu and user's phone.

On user's phone, find and connect to "APPshow-XXX" WiFi network with password 12345678.

Live image will be displayed on the App after the phone is connected to the device's WiFi.

4. Laser Rangefinder Unit

Options: "Meter"/"Yard"

5. Laser Rangefinder Mode

1. Single distance measurement
2. Continuous distance measurement

6. OLED Brightness

Select "OLED Brightness" in the main menu. Press MENU button to choose from the 10 brightness levels (1-10).

7. Target Brightness

Find the "Target Brightness" in the main menu. Press MENU button to choose from the 10 brightness levels (1-10).

8. Contrast Ratio

Press the MENU button to enter the main menu and select "Contrast Ratio". There are 10 options (1-10).

9. Image Detail Boost

Press the MENU button to enter the main menu and select the "Image Detail Boost" function. Image resolution will vary according to each option. Press MENU button to choose your option. There are 5 options (1-5)

10. Date/Time

Move the options by pressing the MENU button. Change the value using the UP/DOWN button. Confirm the values by pressing the MENU button. Quit by holding the MENU button.

11. Language

Enter the language menu setting. Save the settings by pressing the MENU button.

12. Record Audio

Select "Record Audio" and press MENU button. Select "On"/"Off".

13. Format

Select "Format" under main menu, press the MENU button to format the memory storage in the device.

Attention! Data cannot be recovered after formatting!

14. Auto Power Off

Select "Auto Power Off" under main menu, short press MENU button to set the mode between "3 Min", "5 Min" and "Off".

The default mode is "Off".

15. Default Setting

Find default settings under main menu, short press MENU button to enter the submenu.

Select "Confirm" to save the default settings. Attention! Factory default settings will be saved after confirmation.

16. Pixel Cure

Select "Pixel Cure" and press MENU button to get to the submenu. The lens should be covered with lens cover before performing the pixel cure. Press the MENU button and follow the prompts to fix the bad pixels. After repair, please remember to save it.

Hold the UP/DOWN button to move X/Y position. Press the Power button to switch between X/Y/Save.

17. Image Adjustment

Options: "Cancel"/"Confirm"

Select "Image Adjustment" in the main menu. Press MENU button to select "Confirm" and

cover the lens if the image adjustment is required.

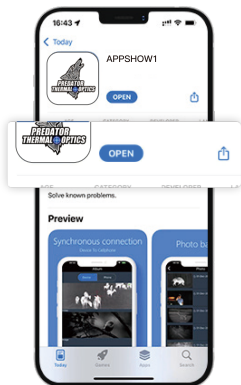
18. Version

Select "Version" to view the device's software version.

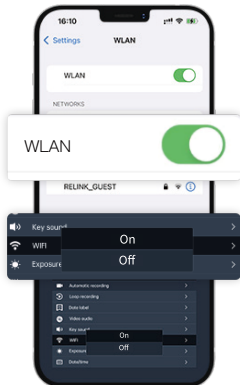
APP Connection



Download APP by Scanning the QR code according to the mobile phone system.



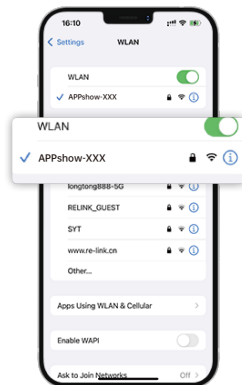
Download the APP



Turn on WiFi on device and phone



Enter APP



Choose WiFi "APPshow..."
to connect WiFi
(Password:12345678)

Matrix / Matrix LRF 35 - 384

Sensor

Type	Uncooled VOx	Resolution	384x288 Super Sensitive
Frame Rate	50 Hz	Pixel Size	12µm
NETD	<25mk		

Optical Characteristics

Objective Lens	35mm, F/1.0	Magnification	2.8x
Digital Zoom	1x / 2x / 4 x / 8x	Eye Relief	30 mm
Dioptre Adjustment	+5/-5 D	Focus Scope Range	5m-∞
FOV	7.5°X5.7°	Detection Distance (Target Size : 1.7m x 0.5m)	1750m

Display

Operating Mode	White Hot, Sky Mode, Black Hot, Red Hot, Fusion	Type / Resolution	0.39 inch / OLED / 1024X768
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Operational Characteristics

Power Supply	3-4.2 V	Waterproof Rating	IP66
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External Power Supply	5V (USB)	Battery	18650 /3500mAh
Operating Temperature	-20°C to + 50°C	Dimensions	160x66x75mm
Weight(Without Battery /Mount)	467g	Operating Time (At Temperature Of 22°C)	5 hours

Video Recorder

Video / Photo Resolution	1024x768	Video / Photo Format	.mp4 / .jpg
Memory Type	Built-in 32G Memory Card		

Wifi Channel

Frequency	2.4GHz	Standard	802.11 b/g
WiFi Signal Range	15m		

Rangefinder

Wavelength	905nm	Max. Measuring Range	1200m
Measuring Accuracy	+/- 1m		

Matrix / Matrix LRF 35 - 640

Sensor

Type	Uncooled VOx	Resolution	640x512 Super Sensitive
Frame Rate	50 Hz	Pixel Size	12µm
NETD	<25mk		

Optical Characteristics

Objective Lens	35mm, F/1.0	Magnification	1.7x
Digital Zoom	1x / 2x / 4 x/ 8x	Eye Relief	30 mm
Diopetre Adjustment	+5/-5 D	Focus Scope Range	5m-∞
FOV	12.5°X9.4°	Detection Distance (Target Size : 1.7m x 0.5m)	1750m

Display

Operating Mode	White Hot, Sky Mode, Black Hot, Red Hot, Fusion	Type / Resolution	0.39 inch / OLED / 1024X768
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Operational Characteristics

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WiFi Signal Range	15m		

Rangefinder

Wavelength	905nm	Max. Measuring Range	1200m
Measuring Accuracy	+/- 1m		

| Notice!

Operating Instructions For Accessories

Power Adapter

Used only to charge batteries equal to or below 5V/2A.

Red Laser Pointer Adjustment

Hold the MENU button to turn on/off the red laser pointer. Adjust the position of the red laser pointer by using an inner hexagon wrench. The adjustment screw can be found directly besides the red laser pointer on the thermal device.

Connect to a Computer

Turn off the device and connect to the computer with a Type-C cable. Hold the power button to turn on the device. The computer will read the memory card of the device.

| SAFETY SUMMARY

- Read and follow all instructions.
- Read all warnings.
- Only use the attachments/accessories specified by the manufacturer.
- All service must be provided by the manufacturer.

18650 batteries MUST be removed when not in use! Not removing the 18650 batteries may void your warranty.

LEGAL NOTICE:

Before attaching to weapons, check the regional legal regulations in the area of application. The attachment to a weapon is always the sole responsibility of the user.

18650 Rechargeable Battery Safety

The 18650 cell contains flammable chemicals such as organic solvents. If the battery is mishandled, it may cause fire, smoke, or an explosion and the battery's functionality will be seriously damaged. 18650 batteries are the most popular type of lithium-ion batteries. Even though there are many safety precautions, they are surprisingly hardy and safe to use. Each authentic cell is rigorously tested for safety, including one meter drop test before they reach you. Nonetheless, you must treat your 18650 batteries with respect.

1. **IMMERSION**- Do not immerse the battery in ANY liquid such as water, ocean water, soda, or beer.
 2. **HIGH TEMPERATURE**- Do not use or place the battery near fire or high temperatures (over 70 degree C).
 3. **WRONG CHARGER**- Do not use unauthorized chargers. Max charge should be 4.2 V for most 18650s.
 4. **REVERSE POLARITY**- Make sure the + and - poles are oriented correctly. Do not force into the mount.
 5. **DIRECT CONNECTION**- Do not connect the battery with AC plug (outlet) or car plugs.
 6. **SHORT -CIRCUIT**- Do not connect the + and - terminals with conductive materials. Keep out of pockets.
 7. **IMPACT**- Avoid unnecessary impact to the battery. Keep in a hard case during transport.
 8. **PENETRATION** - Be careful not to penetrate the battery in any way.
 9. **SOLDERING** - Do not directly solder on to the battery: the insulator could melt or damage the vent.
 10. **DISASSEMBLY & RECONSTRUCTION**- Do not disassemble the battery. You may damage the protection circuit or worse.
 11. **DEFORMATION**- Do not use a battery with conspicuous damage or deformation.
 12. **INGESTION**- The batter should be kept away from infants and children.
 13. **STORING**- Do not put the battery in the microwave or other cooking appliances.
 14. **MIXED USE**- Do not use the battery with other batteries unless they will always be used together.
 15. **RUST, COLOR CHANGE**- Stop using battery if there is abnormal smell, heat, deformities, or discoloration.
 16. **CHARGING TIME**- Stop charging if the battery cannot finish charging within the specified time.
 17. **LEAKAGE**- Do not touch leaking batteries. Battery liquid exposed to your skin or eyes could cause significant damage.
 18. **TRANSPORT**- To prevent short-circuits or damage, tightly pack the battery in a case or box.
 19. **DIRECT SUNLIGHT**- Do not use or leave the battery in excessive heat such as in a car or in direct sunlight.
 20. **STATIC ELECTRICITY** - Do not use batteries where it generates more than 100v of static electricity.
 21. **CHARGING TEMPERATURE**- The charging temperature range is regulated between 10 and 45 Celsius.
 22. **MANUAL**- You should read both the manual for your device and the battery charger before use.
 23. **FIRST TIME USE**- If battery has unusual color, heat generation, or rust, contact vendor.
 24. **FLAMMABLE MATERIALS**- Do not charge or discharge near flammable materials.
 25. **LEAKAGE ON SKIN**- If leakage gets on skin or clothing, flush with water to help prevent irritation.
 26. **INSULATION**- If wires or metal objects come out from the battery, please dispose of the battery properly.
 27. **RECYCLE**- Recycle battery at local battery drop-off point or contact vendor you bought from.
- The 18650 cell contains flammable chemicals such as organic solvents. If the battery is mishandled, it may cause fire, smoke, or an explosion and the battery's functionality will be seriously damaged. 18650 batteries are the most popular type of lithium-ion batteries. Even though there are many safety precautions, they are surprisingly hardy and safe to use. Each authentic cell is rigorously tested for safety, including one meter drop test before they reach you. Nonetheless, you must treat your 18650 battery with respect.

WARRANTY INFORMATION AND REGISTRATION

This product is guaranteed to be free from manufacturing defects in material and workmanship under normal use for a period of five (5) years from the date of purchase. In the event that a defect covered by the warranty below occurs during the applicable period stated above, Predator Thermal Optics, at its discretion, will either repair or replace the product; such action on the part of Predator Thermal Optics shall be the full extent of Predator Thermal Optics liability, and the customer's sole and exclusive repairation. This warranty does not cover a product if it has been; (a) used in ways other than its normal and customary manner; (b) subjected to misuse; (c) subjected to alterations, modifications or repairs by the customer or by any party other than Predator Thermal Optics without prior written consent of Predator Thermal Optics; (d) is the result of a special order or categorized as "close-out" merchandise or merchandise sold "as-is" by either Predator Thermal Optics or the Predator Thermal Optics dealer; or (e) merchandise that has been discontinued by the manufacturer and either parts or replacement

units are not available due to reasons beyond the control of Predator Thermal Optics shall not be responsible for any defects or damage that in Predator Thermal Optics view are a result from the mishandling, abuse, misuse, improper storage or improper operation of the device, including use in conjunction with equipment that is electrically or mechanically incompatible with, or of inferior quality to, the product, as well as failure to maintain the environmental conditions specified by the manufacturer. This warranty is extended only to the original purchaser. Any breach of this warranty shall be enforced unless the customer notifies Predator Thermal Optics at the address noted below within the applicable warranty period. The customer understands and agrees that except for the foregoing warranty, no other warranties written or oral, statutory, expressed, or implied, including any implied warranty of merchantability or fitness for a particular purpose, shall apply to the product. All such implied warranties are hereby and expressly disclaimed.

LIMITATION OF LIABILITY

Predator Thermal Optics will not be liable for any claims, actions, suits, proceedings, costs, expenses, damages, or liabilities arising out of the use of this product. Operation and use of the product are the sole responsibility of the customer. Predator Thermal Optics' sole undertaking is limited to providing the products and services outlined herein in accordance with the terms and conditions of this agreement. The provision of products sold, and services performed by Predator Thermal Optics Inc. to the customer shall not be interpreted, construed, or regarded, either expressly or implied, as being for the benefit of or creating any obligation toward any third party of legal entity outside Predator Thermal Optics and the customer; Predator Thermal Optics obligations under this agreement extend solely to the customer. Predator Thermal Optics liability hereunder for damages, regardless of the form or action, shall not exceed the fees or other charges paid to Predator Thermal Optics, by the customer or customer's dealer. Predator Thermal Optics shall not, in any event, be liable for special, indirect, incidental, or consequential damages, including, but not limited to, lost income, lost revenue, or lost profit, whether such damages were foreseeable or not at the time of purchase, and whether or not such damages arise out of a breach of warranty, a breach of agreement, negligence, strict liability, or any other theory of liability.

PRODUCT REGISTRATION

In order to validate the warranty on your product, the customer must complete and submit the Predator Thermal Optics PRODUCT REGISTRATION FORM on our website within 30 days from the date of purchase. Hard copies will not be accepted. <https://PredatorThermalOptics.com/product-warranty-registration>

OBTAINING WARRANTY SERVICE

To obtain warranty service on your unit, the End-user (Customer) must notify the Predator Thermal Optics service department via e-mail. Send any requests to Info@PredatorThermalOptics.com to receive a Return Merchandise Authorization number (RMA). When returning any device, please take the product to your retailer, or send the product, postage paid and with a copy of your sales receipt, to Predator Thermal Optics service center at the address listed at the bottom of this page. All merchandise must be fully insured with the correct postage; Predator Thermal Optics will not be responsible for improper postage or merchandise that becomes lost or damaged during shipment. When sending product back, please clearly write the RMA# on the outside of the shipping box. Please include a letter that indicates your RMA#, the customer's name, a return address, reason for the return, contact information (valid telephone numbers and/or an e-mail address), and proof of purchase that will help us to establish the valid start date of the warranty. Product merchandise returns that do not have an RMA# listed may be refused, or a significant delay in processing may occur. Estimated Warranty service time is 10-20 business days and also dependent on if the item is currently in stock. The end-user/customer is responsible for postage to Predator Thermal Optics for warranty service. Predator Thermal Optics will cover return postage/shipping after warranty repair to the end-user/customer only if the product is covered by the aforementioned warranty. Predator Thermal Optics will return the product after warranty service by domestic UPS Ground service and/or domestic mail. Should any other requested, required, or international shipping methods be necessary, the postage/shipping fee will be the responsibility of the end-user/customer. For service, repair, or replacement, please contact Predator Thermal Optics at address.

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