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Mars MT1000LRF

Thermal Imaging Camera



User Manual



ATTENTION

When using a monocular, it may cause eye fatigue or temporary blindness, but recovery will occur after stopping use. Please note the following points when using a monocular :

I. Focusing

1. ****Correct Focusing****

- Before observing with a monocular, ensure that the monocular is correctly focused. Failure to do so may lead to excessive eye adjustment and visual fatigue. For example, when observing a distant target, slowly turn the focusing knob until the target appears clearly. Avoid prolonged viewing when the image is blurred, as the eyes will constantly adjust their muscles to see the image clearly, which may cause eye muscle strain.

2. ****Avoid Frequent Focusing****

- Do not change the focus too frequently, rapidly switching from one distance target to another and repeatedly focusing. This will put the ciliary muscles of the eyes in a frequent state of tension and relaxation. For instance, when observing birds in the sky and scenery on the ground, switching back and forth too quickly can easily lead to eye fatigue or even dizziness.

II. Duration of Observation

1. ****Limiting Continuous Observation Time****

- It is not advisable to use a monocular for an excessively long period of time continuously. Prolonged observation through a monocular can reduce the blinking rate of the eyes. Normally, people blink 15-20 times per minute, but during focused observation, this may decrease to just a few times per minute. This can lead to an uneven distribution of the tear film on the surface of the eyes, easily causing eye dryness. It is generally recommended to take a break of 2-3 minutes after 15-20 minutes of continuous observation, during which time you can look at distant natural scenery or close your eyes to rest.

2. ****Avoiding Prolonged Observation in Bright Light****

- If you are observing in a bright light environment (such as observing the sun, which is a very dangerous act and requires the use of specialized solar filters) or observing high-brightness targets for an extended period (such as objects in snowy landscapes due to the intense reflection of snow), the retina of the eyes is susceptible to damage. In such cases, the duration of observation should be more strictly limited, and appropriate shading devices or light filters should be used.

III. Observation Environment Aspects

1. ****Stable Observation Posture****

- Maintaining a stable observation posture is crucial. If the posture is unstable, the monocular is prone to shaking, causing the eyes to constantly adjust their gaze direction to track the target. For example, when holding a monocular, keep your arms stable or use auxiliary equipment such as a tripod. Unstable observation can cause extra strain on the eye muscles, leading to fatigue and discomfort.

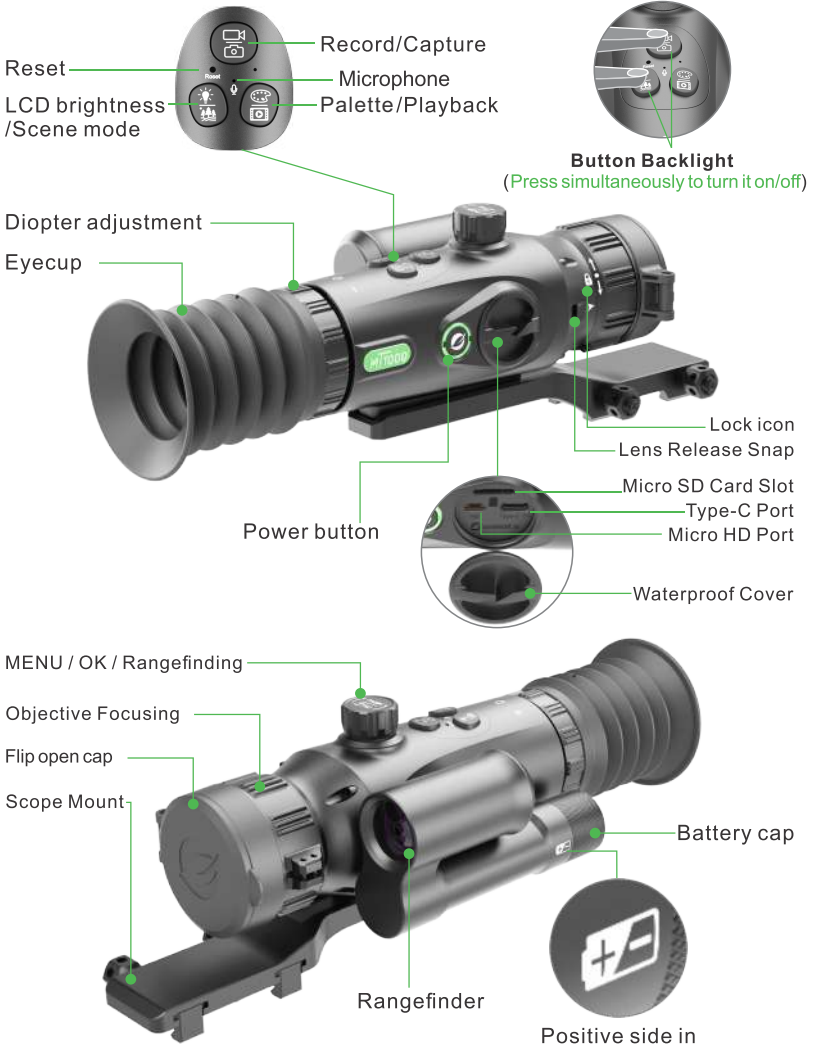
2. ****Avoid Dust and Foreign Objects****

- When using a monocular, ensure that there is no dust, sand, or other foreign objects around the lenses and eyepiece. When using it in environments with heavy wind and dust, be particularly careful to protect the monocular and avoid foreign objects entering the eyepiece and coming into contact with the yes. If a foreign object enters the eye, do not rub it. Instead, rinse it with clean water as soon as possible or seek medical assistance.







CONTENTS

PRODUCT IMAGE	1
BUTTON INTRODUCTION	2
SPECIFICATIONS	3
PREPARING	
1.Unboxing	5
2.Power source	
2.1.Powered by battery	6
2.2.Powered by USB Type-C	6
3.Type-C port/Micro SD Card slot/Micro HDMI port	
3.1.Type-C Port	7
3.2.Micro SD card slot	8
3.3.Micro HD port	8
4.Operation	
4.1.Diopter adjustment	9
4.2.Eyecup installation	9
4.3.Objective Lens Installation and Removal	10
4.4.Lens recognition	12
4.5.Objective focusing	12
4.6.Mount installation	12
5.Rangefinder (Non-removable)	
5.1.Operation	13
6.Reset	13
7.Turn ON/OFF	13
HOME SCREEN	14
MENU	16
PLAYBACK	38
FIRMWARE UPDATE	39
TROUBLESHOOTING	40

PRODUCT IMAGE



BUTTON INTRODUCTION

Button	Current State	Short Press	Press and hold	Rotate	Double-click
 Power	OFF	/	Press for 3s to turn ON	/	/
	ON	Sleep / Wake	Press for 3s to turn OFF	/	/
 Rotate	Home Screen	Turn ON/OFF rangefinder	Enter MENU	Zoom in / Zoom out	Shutter correction
	MENU	Confirm	Exit MENU	Move up or down	/
	Playback	Play	Enter Playback MENU	Select videos	/
	Shot zero	Select X/Y value; Confirm	Unsave value and exit shotzero	Increase/decrease value; Move left/right	/
 Recording	Home Screen	Start/pause recording	Capturing	/	/
	Playback	Play video/pause play	/	/	/
	Shot zero	Short press to call out save box, short press again to save parameter	/	/	/
	Lid calibration	Calibrate	/	/	/
 Left	Home Screen	Adjust brightness	Switching scenes	/	Turn on/off picture-in-picture
	MENU	Flip the MENU	/	/	/
	Ballistic parameters	Decrease value	Rapid decrease value	/	/
 Right	Home Screen	Switch Palette	Enter playback	/	/
	Playback	Return to Home Screen, View video, return to playback screen	/	/	/
	Ballistic parameters	Increase value	Rapid increase value	/	/
 Reset	When abnormal situation occurs, press reset to shut down the device				

SPECIFICATIONS

Item	Mars MT1000		
Resolution (pixels)	640*512		
Display resolution (pixels)	1024*768		
Pixel pitch (um)	12		
NETD (mk)	<20		
Objective lens(mm)	35	50	
Relative aperture(D/f')	F1.0	F1.0	
Magnification	2X	2.8X	
Digital zoom	1-8X		
Field of view(HxV) Horizontal	12.5	8.8	
Field of view(HxV) Vertical	10.1	7	
Field of view(HxV) Diagonal	16	11.2	
Focus range	3.28yd~Infinity	3.28yd~Infinity	
Eye relief(mm)	70		
Diopter adjustment(D)	-6~+2		
Detection range(m/yd)	1800/1969	2600/2843	
Reticle type	7		
Reticle color	White / Red / Green / Blue / Yellow		
Position	6		
Scene mode	Snow / Fog / City / Forest / Rain		
Palette	WhiteHot / Sepia / Ironbow / Rainbow / Night / Aurora / Red Hot / Jungle / Medical / Black Hot / Glory Hot		
Photo format	JPG		
Photo resolution(pixels)	1024 * 768		
Frame rate	60HZ/50HZ/ 30HZ		

Video format	Mp4		
Video resolution(pixels)	1024*768		
Storage	32-256Gb		
Detachable lens	YES		
Automatic lens recognition	YES		
Microphone	YES		
3D Gyroscope	YES		
Electronic compass	YES		
Capacity(mAh)	3200		
External power supply(V)	USB 5V \equiv 2A Type-C		
Operating time(h)	5H		
LRF detection range	5.5-1300yard		
Accessory rail mount	Picatinny		
Body material	Aluminum		
Waterproof rating	IP67		
Adjustment range(MOA)	455 MOA Windage x 365 MOA Elevation		
Max recoil power on rifled weapon(Eo) G	1000		
Operating temperature(F)	-4 to +122		
Dimension(inch)	6.22*3.23*2.64	6.77*3.43*2.77	
Weight(g)	549	620	
Warranty	3Year		

NOTE: oneleaf.ai reserves the right to change the above specifications at any time without notice.

PREPARING

1. Unboxing

Package Contents:

- Mars MT1000LRF



- Scope Mounts



- Eyecup



- Flip open cap



- Micro HDMI Cable



- Type-C Cable



- Velvet bag



- Micro SD Card



- Allen Wrench



- Lens Cloth



- O-ring



- Manual



- Please remove the insulating sheet on the external battery before use.
- Do not use this equipment to look directly at the sun, welding, strong laser and other high radiation sources.
- **When cleaning the lens, Please use a wet cloth to wipe the lens or glass.**
- Do not use damaged batteries to power the device.
- Please note that the decrease in battery capacity at sub-zero temperatures is normal and is not a factory defect.

2. Power source

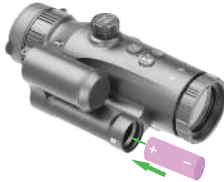
2.1 Powered by Battery

Install the battery as follows

a. Unscrew the battery cover counterclockwise.



b. Load battery (positive side in).



c. Install and tighten the battery cover.



2.2. Powered by USB Type-C

- The MT1000 includes a Type-C port, which can be found by unscrewing the waterproof cover on the right side of the device counterclockwise.



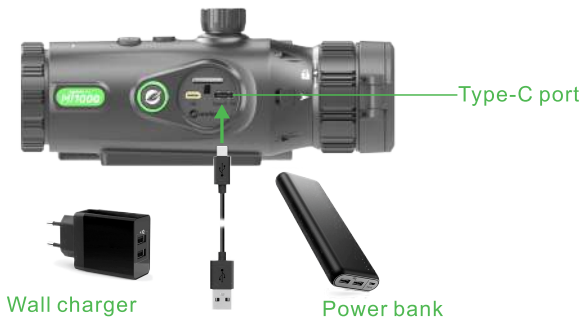
Turn counterclockwise
to unscrew



Turn clockwise to tighten

Waterproof cover

- Use the Type-C cable included in the package.
- Use a charger or rechargeable battery with 5V \equiv 2A output port to power the device.



NOTE

- Please use a charger or power bank with an output port of 5V $\overline{=}$ 2A or above to power the device.
- When charging the device, it is recommended to power off the device.

3.Type-C Port/Micro SD Card Slot/Micro HD Port

Unscrew the waterproof cover on the right side of the device counterclockwise to expose the ports. Make sure all ports are not exposed to water after the waterproof cover is removed.

3.1Type-C Port

(1) Power the device.

(2) Charge the battery.

- The indicator light is red when the device is turned off for charging, and the indicator light is off after it is fully charged.
- The indicator light changes from green to yellow when the device is turned on to charge, and changes from yellow back to green after it is fully charged.



Red Indicator




Green Indicator




Yellow Indicator

- Charging when device turned off takes approximately **2.5** hours.

(3)Data transmission.

- Connect the device to the computer via a Type-C cable. Press and hold  to power on , The computer will prompt that a removable disk has been detected.

A prompt box of  will pop up on the screen. Once the connection is established, photos and videos from the Micro SD card can be viewed on the computer.

- When the device is connected to a computer, the device will automatically shut down when the Type-C cable is unplugged.

NOTE

- Please use a charger or power bank with an output port of 5V=2A to power the device.
- It is recommended to turn off the device while charging.
- Make sure the device has a Micro SD Card installed before connecting the device to PC.

3.2 Micro SD Card Slot

- Install the Micro SD card:

Follow the icon instructions and use your finger to push it into the port in the correct direction until it locks into place.

- Remove the installed Micro SD card:

Gently press the Micro SD card and it will eject.



NOTE

- There is only one correct direction for the Micro SD card to be inserted. Do not force the card into the slot to avoid damaging the card and the device.
- When removing the installed Micro SD card, please do it slowly.
- Please use a Micro SD card with a read rate of C10 or higher and a capacity of 32-256Gb.
- Do not remove the Micro SD card during recording.

3.3 Micro HD Port

Connect the device to the monitor via the Micro HD cable and the monitor can display the captured images from the device in real time.



Micro HDMI



Monitor

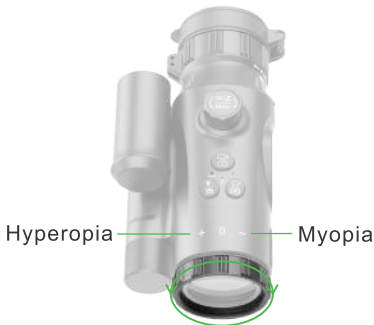
NOTE

- The maximum output current of the Micro HDMI port is 5V=1000mA.

4. Operation

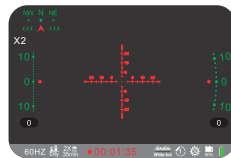
4.1 Diopter Adjustment

The device's diopter adjustment accommodates a wide range of visual needs, ranging from myopia of 600 degrees to hyperopia of 200 degrees. You can adjust the diopter wheel to your eyesight until the display appears clearly in the viewfinder. Rotate the diopter wheel clockwise for myopia and counterclockwise for hyperopia.



Rotate clockwise to adjust myopia.

Rotate counterclockwise to adjust hyperopia .



NOTE

- The diopter adjustment solely aims to ensure clear visibility of icons on the screen. Achieving sharp image clarity requires proper focusing of the objective lens.

4.2 Eyecup Installation

A soft eyecup gives the eyes good cushioning and reduces interference from ambient light. To install the eyecup, rotate it clockwise into the eyepiece until it is securely tightened.



4.3 Objective Lens Installation and Removal

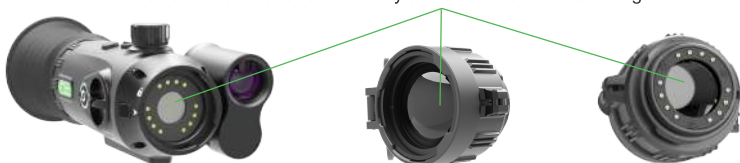


- When replacing the lens, please turn off the device.
- After replacing the lens, please calibrate the device by lid calibration before use. (Refer to lid calibration section)
- Before installing the lens, please make sure that the bayonet, the lens connector and the pins are clean and free of dust.
- When replacing the lens, replace it quickly in a clean place.
- Do not forcefully break the lens.

(1) Lens Installation :

When replacing the lens, please turn off the device.

Check that the lens and body are clean before installing it.



If the display appears to have an unclear picture, check that the glass surfaces in these 3 places are clean.

- a. The lens release catch has a white marking and the lens connector has a white dot, align the white dot with the white marking on the device.



Align the white dot with the white marking on the device.

b. Load the lens, press down slightly and rotate the lens clockwise.



c. When you hear a 'click', the lens is successfully installed.



NOTE

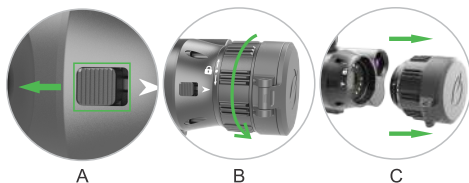
- Make sure the lens is mounted successfully before releasing your fingers on the lens.

(2) Lens Removal:

A. Push the lens release catch down to the bottom (Hold the lens).





B. Rotate the lens counterclockwise.

C. Remove the lens outward.



- After each lens change, please re-calibrate and set zero before use.

4.4 Lens Recognition

The device can automatically recognize the lens after loading different objective lenses. When  is displayed at the bottom of the main interface, it means a 2X lens with a focal length of 35mm,  means a 2.8X lens with a focal length of 50mm,  means a 5X lens with a focal length of 75mm, and  means no lens is installed.



35 mm lens



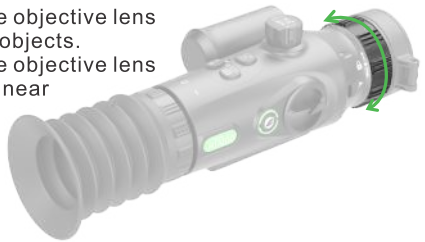
50 mm lens



75mm lens

4.5 Objective Focusing

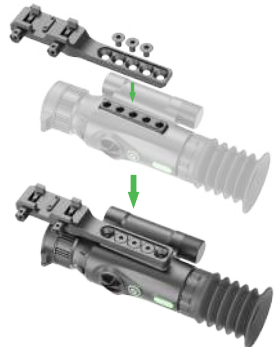
Rotate the focusing ring of the objective lens clockwise to focus on distant objects.
Rotate the focusing ring of the objective lens counterclockwise to focus on near objects. To ensure that the observed objects at different distances can be clearly displayed on the screen.



4.6 Mount Installation

There are 5 screw holes on the bottom of the scope mounting device for mounting the scope mount.

- Mount the scope on the mounting slot and adjust it forward or backward to a viewable position.
- Align any 3 consecutive screw holes and place the screws into the screw holes.
- Tighten the 3 screws in sequence with a 5/32-inch wrench.







If an electric wrench is used for installation, a torque of 5N.m is recommended.

5. Rangefinder (Non-removable)

Measuring range: 5.5~1300yards




5.1 Operation

In home screen, short press the knob  to turn on/off the rangefinder. A green icon  appears in the main interface, and a red flag icon  appears in the upper right, if the device detects that there is no rangefinder, or the rangefinder's current measurement of the target is out of the range, the red icon will change to gray .


6. Reset



When abnormal situation occurs, press reset to shut down the device.

To reboot the device, press and hold the power button  for 3s to turn on the device.



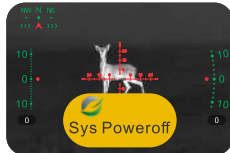
7. Turn ON/OFF

When the device is turned off, press and hold the POWER button  for 3 seconds until welcome logo displays, then the device will enter the main interface (In order to get the ideal thermal imaging, it is recommended to cover the lens cover and perform a lid calibration after powering on the device).

When the device is ON, long press the POWER button  for 3 seconds, the device will be turned off after appearing  prompt box. If the device has an abnormal situation, long press 8s to force shutdown.

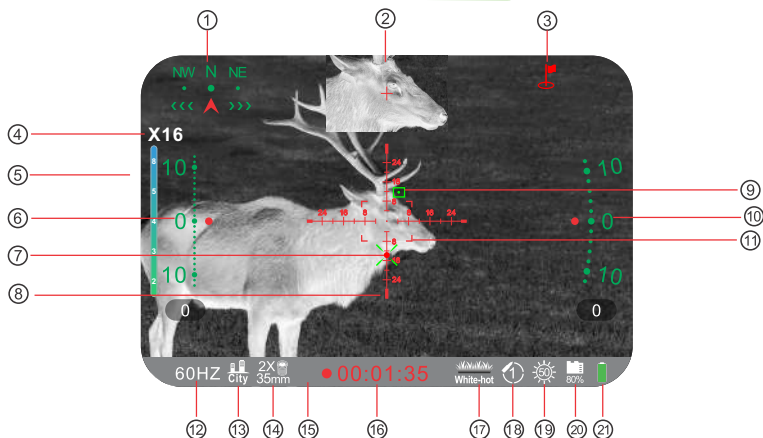





Welcome Logo

































Power off prompt box






HOME SCREEN

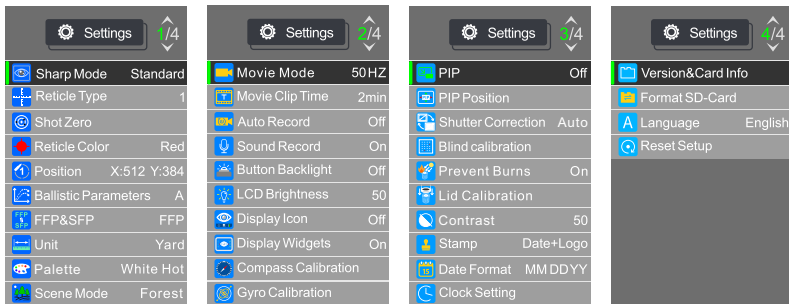


- ① **Magnetometer:** Yaw angle based on compass data.
- ② **Picture in Picture:** Partial zoom in.
- ③ **Rangefinder:** Short press the knob to turn on the rangefinder and the red flag icon appears , if the system detects no rangefinder, or the current rangefinder measurement target is out of range, the icon will turn gray .
- ④ **Magnification:** optical magnification multiplied by digital magnification.
- ⑤ **Digital Zoom:** Default 1X , maximum 8X , rotate clockwise to zoom in 2X/3X/4X/5X/8X and counterclockwise to zoom out.
- ⑥ **Gyro Pitch:** Based on the internal 3D gyro tilt.
- ⑦ **Falling point:**  The falling point given based on the reticle and ballistic parameters when ballistic is turned on.
- ⑧ **Reticle:** Used for aiming.
- ⑨ **Ranging spot icon:** Indicates the position of the ranging spot, and the ranging data follows the top right corner of the icon.
- ⑩ **Gyroscope roll angle:** Shows the tilt of the device according to the internal 3D gyroscope.
- ⑪ **Capture:** Long press the button to take a photo, the icon disappears after the photo is taken.
- ⑫ **Frame rate:** Display the currently selected video frame rate, there are three options: 60HZ / 30HZ / 50HZ.

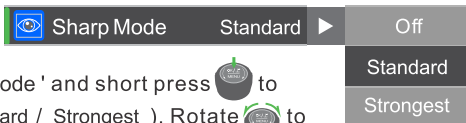
- ⑬ **Scene Mode:** Long press the left button to switch between Snow  /Fog  /City  /Forest  /Rain  5 modes.
- ⑭ **Lens Recognition:** The device can automatically recognize the lens after loading different objective lenses. When  is displayed at the bottom of the main interface, it means a 2X lens with a focal length of 35mm,  means a 2.8X lens with a focal length of 50mm,  means a 5X lens with a focal length of 75mm, and  means no lens is installed.
- ⑮ **Status bar:** Hidden by default when there is no operation, or select 'on' in 'Display Widgets' sub-menu to enable the function of always displaying.
-  Display Widgets
On
- ⑯ **Recording Time:** Press the Record button to start recording, and the time will increase during the recording process. Press the button again to stop recording, and the recording time icon disappears. Set auto-save time 2min/3min/5min/10min in the menu.
- ⑰ **Palette:** Short press the Right button  to switch among 11 modes, White Hot  / Sepia  /Ironbow  /Rainbow  / Night  / Aurora  / Red-Hot  / Jungle  / Medical  / Black Hot  / Glory Hot .
- ⑱ **Position:** The serial number inside the icon represents the Position's group number. There are 6 Position profiles in total. Each Position has three attributes: Reticle Type, Reticle Color, and Shot Zero.
- ⑲ **LCD Brightness:** Short press the Left button  to quickly adjust the LCD brightness, each short press will reduce the brightness by 5, when the LCD is 0, short press the right button again, the LCD brightness will switch to 100.
- ⑳ **Micro SD Card:**  Shows Micro SD card is inserted.  shows no Micro SD card is inserted. The percentage indicates the available space on the card.
- ㉑ **Battery:** There are 5 levels     . Each representing 20% of the charge. The icon will cycle through in an incremental pattern while charging.





MENU

- Long press  vertically on the Home Screen to enter MENU.
- Rotate  to move up and down. Short press  to go to previous MENU and short press  to go to next MENU.
- In MENU, long press  vertically to exit MENU.



Sharp Mode



Rotate  to select 'Sharp Mode' and short press  to call out 3 options (Off / Standard / Strongest). Rotate  to select an option and short press  to save setting.

Sharp mode view technology utilizes the latest integrating advanced AI algorithms to dramatically optimizes thermal imaging to provide a clear and detailed view of the target even in the most challenging environments.

OFF: Image display when Sharp mode view technology is turned off.




Standard: Image display when Sharp mode view technology is turned on.

Strongest: Image display when Sharp mode view technology is strongest.

Reticle Type

Reticle Type

1

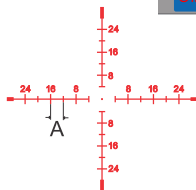
Rotate  to select 'Reticle Type' and short press  to call out 8 options. The number 1/2/3/4/5/6/7 corresponds to 7 types of reticle. Select a style and then short press  again to save the setting.

When the **CR** option is selected, the Home Screen will not display the reticle, and the Shot Zero/Reticle Color /Position/ Ballistic Parameters/ FFP&SFP functions will also be unavailable.



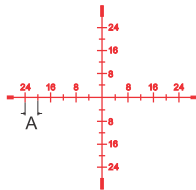
35mm Lens Reticle Type 1

Digital zoom	1X	2/3/4/5/8X
Section	A	A
Mil@100yd	4MIL	2MIL



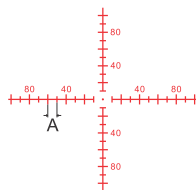
35mm Lens Reticle Type 2

Digital zoom	1X	2/3/4/5/8X
Section	A	A
Mil@100yd	4MIL	2MIL



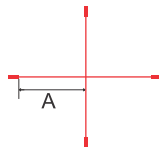
35mm Lens Reticle Type 3

Digital zoom	1/2X	3/4/5/8X
Section	A	A
MOA@100yd	10MOA	5MOA



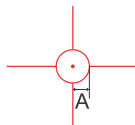
35mm Lens Reticle Type 4

Section	A
MOA@100yd	60MOA



35mm Lens Reticle Type 5

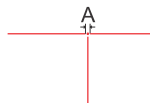
Section	A
MOA@100yd	15MOA



35mm Lens Reticle Type 6

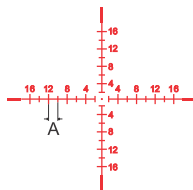
35mm Lens Reticle Type 7

Section	A
MOA@100yd	5MOA



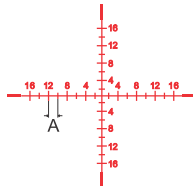
50mm Lens Reticle Type 1

Digital zoom	1/2X	3/4/5/8X
Section	A	A
Mil@100yd	2MIL	1MIL



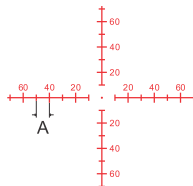
50mm Lens Reticle Type 2

Digital zoom	1/2X	3/4/5/8X
Section	A	A
Mil@100yd	2MIL	1MIL



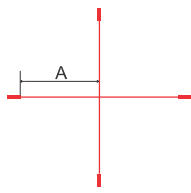
50mm Lens Reticle Type 3

Digital zoom	1X	2/3/4/5/8X
Section	A	A
MOA@100yd	10MOA	5MOA



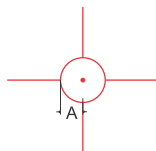
50mm Lens Reticle Type 4

Section	A
MOA@100yd	60MOA



50mm Lens Reticle Type 5

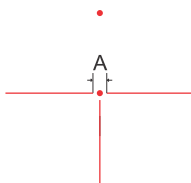
Section	A
MOA@100yd	15MOA



50mm Lens Reticle Type 6

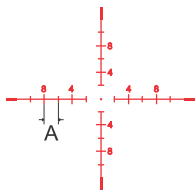
50mm Lens Reticle Type 7

Section	A
MOA@100yd	5MOA



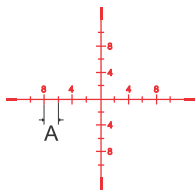
75mm Lens Reticle Type 1

Digital zoom	1X	2/3/4/5/8X
Section	A	A
Mil@100yd	2MIL	1MIL



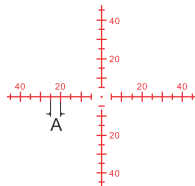
75mm Lens Reticle Type 2

Digital zoom	1X	2/3/4/5/8X
Section	A	A
Mil@100yd	2MIL	1MIL



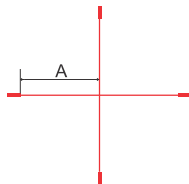
75mm Lens Reticle Type 3

Digital zoom	1/2/3/4/5/8X
Section	A
MOA@100yd	5MOA



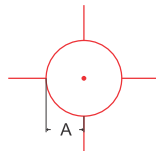
75mm Lens Reticle Type 4

Section	A
MOA@100yd	60MOA



75mm Lens Reticle Type 5

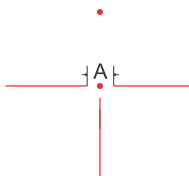
Section	A
MOA@100yd	15MOA



75mm Lens Reticle Type 6



75mm Lens Reticle Type 7


Section	A
MOA@100yd	5MOA

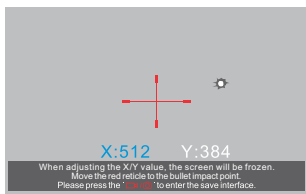


Shot Zero

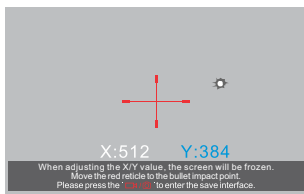


Rotate  to move the cursor to select Shot Zero, press  to enter the adjustment interface to adjust the position of the reticles.

- Short press  to switch to X or Y, the selected coordinate and value will be shown in blue color.



X Value is selected




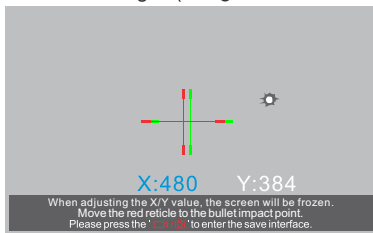
Y Value is selected

When adjusting the X/Y value, the screen will be frozen.

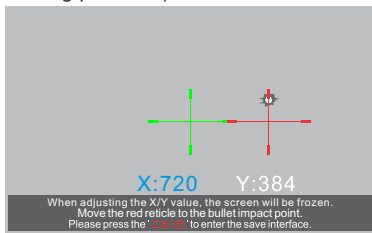
(1) When **X** value is selected (**X** value shown in blue color)

Rotating  counterclockwise, the **X** value decreases and the red reticle move to the left.


Rotating  clockwise, the **X** value increases and the red reticle move to the right (the green reticle is the starting position)




Rotating the knob counterclockwise, the X value decreases.




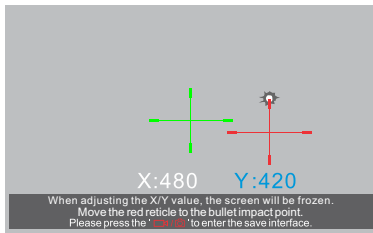
Rotating the knob clockwise, the X value increases.

- Short press  to switch to X or Y, the selected coordinate and value will be shown in blue color.

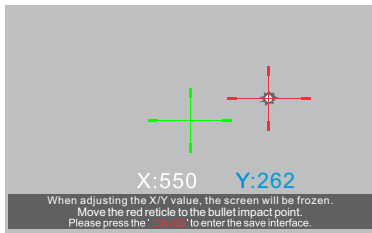
(2) When **Y** value is selected (**Y** value shown in blue color)

Rotating  counterclockwise, the **Y** value decreases and the red reticle move to the down.


Rotating  clockwise, the **Y** value increases and the red reticle move to the up (the green reticle is the starting position)



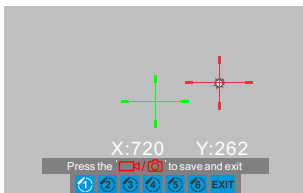
Rotating the knob counterclockwise, the Y value decreases.





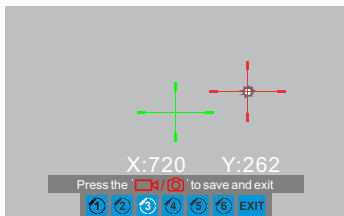
Rotating the knob clockwise, the Y value increases.


- Short press recording button  to call out the position options.

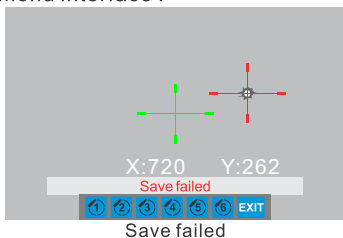
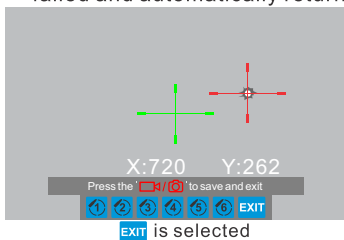
Position Group of Options



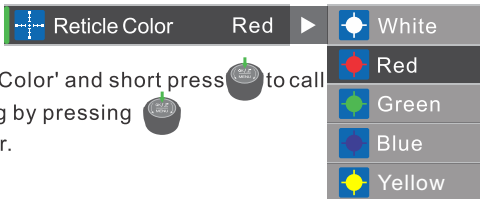
- Rotate  to select to save the data into position 1-6 (the selected position will turn white), short press  to confirm the selection. After position is saved successfully, device automatically return to the menu interface.






- Select **EXIT**, short press  to confirm the selection, the position save failed and automatically return to the menu interface.

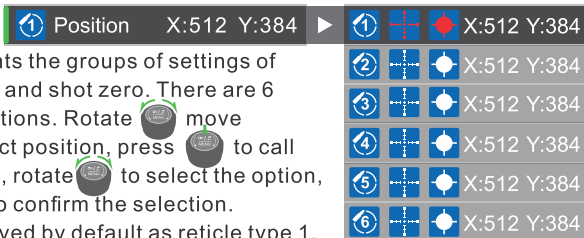






Reticle Color



Rotate  to select 'Reticle Color' and short press  to call out 5 options. Saving setting by pressing  again after you select a color.

Position



Position represents the groups of settings of reticle type, color and shot zero. There are 6 different combinations. Rotate  move the cursor to select position, press  to call out the sub-menu, rotate  to select the option, press  again to confirm the selection. The Position 1 saved by default as reticle type 1, reticle color red, reticle coordinates (512,384). The other Positions are defaulted as reticle type 1, reticle color white, and reticle coordinates (512,384)

Ballistic Parameters



Ballistic Parameters

A

The Ballistic Parameters allows you to quickly calculate the trajectory of a bullet and give you the exact point of impact.

NOTE



1. To enable this feature, make sure your device comes with the rangefinder.
2. When the unit in the menu is set to Yard, all units in the ballistic parameter are switched to imperial; When the unit in the menu is set to Meter, all units in the ballistic parameters are switched to metric.
3. To ensure the accuracy of the parameters, please make sure that the units in the ballistic parameters are the same as the actual measurement units.



Mars MT1000LRF

(1) Long Press to enter MENU, rotate to select Ballistic Parameters A

Short press to call out submenu for parameter setting. Long press

to return to MENU.






Settings		1/4
	Sharp Mode	Standard
	Reticle Type	1
	Shot Zero	
	Reticle Color	Red
	Position	X:512 Y:384
	Ballistic Parameters	A
	FFP&SFP	FFP
	Unit	Yard
	Palette	White Hot
	Scene Mode	City


MENU

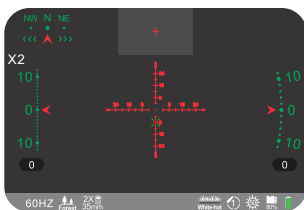
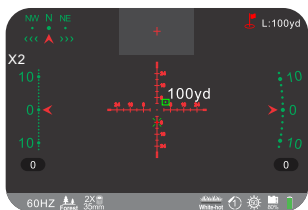
	Ballistic Switch	On
	Ballistic Group	A
	Ballistic Coefficient	0.029
	Ballistic Model	G1
	Bullet Weight(gr)	15.59
	Initial Velocity(ft/s)	900
	Zero Range(yd)	20
	Sight Height(Inches)	2.00
	Shooting Angle(deg)	1
	Wind Velocity(mph)	0.1
	Wind Angle(deg)	1
	Altitude(ft)	1643
	Temperature(F)	59
	Barometric Pressure(in Hg)	29.9
	Relative Humidity(%)	75.0

SUBMENU














(2) After setting the parameters, long press  to save the settings and return to the main menu.
















(3) In the Home Screen, a shot press  turns on both the rangefinder and ballistic functions, and  will be displayed on the screen. Aim the rangefinder cursor at the target and  will move according to the ballistic parameters and actual distance. After determining the target position, shot press  to lock  and turn off the rangefinder function.


(4) Align  with the point of aim.

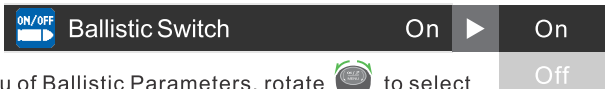


Rotate  to select Ballistic Parameters and short press  to enter Ballistic Parameters setting.

Unit	Yard	Yard
		Meter
 Ballistic Switch	On	
 Ballistic Group	A	
 Ballistic Coefficient	0.029	
 Ballistic Model	G1	
 Bullet Weight(gr)	15.59	Unit: Grain
 Initial Velocity(ft/s)	900	Unit: ft/s
 Zero Range(yd)	20	Unit: yard
 Sight Height(inches)	2.00	Unit: Inches
 Shooting Angle(deg)	1	Unit: deg
 Wind Velocity(mph)	0.1	Unit: mph
 Wind Angle(deg)	1	Unit: deg
 Altitude(ft)	1643	Unit: ft
 Temperature (F)	59	Unit: F
 Barometric Pressure(in hg)	29.9	Unit: in Hg
 Relative Humidity(%)	75.0	

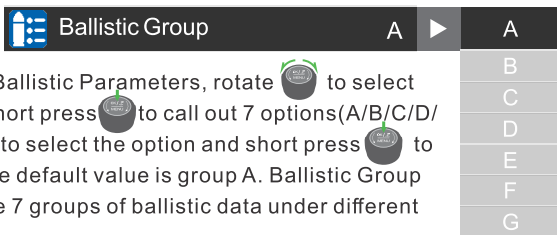
Unit	Meter	Yard
		Meter
 Ballistic Switch	On	
 Ballistic Group	A	
 Ballistic Coefficient	0.029	
 Ballistic Model	G1	
 Bullet Weight(g)	1.010	Unit: g
 Initial Velocity(m/s)	274.32	Unit: m/s
 Zero Range(m)	18.29	Unit: m
 Sight Height(cm)	5.08	Unit: cm
 Shooting Angle(deg)	1	Unit: deg
 Wind Velocity(mph)	0.045	Unit: m/s
 Wind Angle(deg)	1	Unit: deg
 Altitude(m)	500.79	Unit: m
 Temperature (C)	15.00	Unit: C
 Barometric Pressure(hPa)	1012.53	Unit: hPa
 Relative Humidity(%)	75.0	

These parameters determine  trajectory and accuracy. When using MT1000, please adjust these parameters according to your actual situation and needs to get the best performance.



In the submenu of Ballistic Parameters, rotate to select 'Ballistic Switch'. Short press to call out two options: On/Off. Rotate to select the option and short press to save the setting. The Ballistic Switch is 'On' by default.

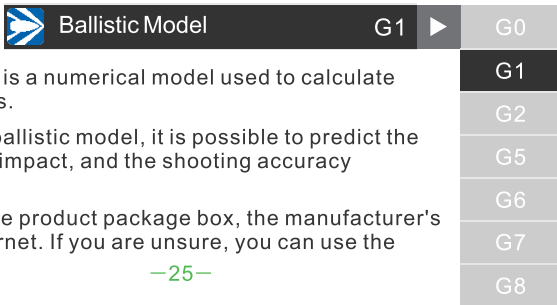
For rangefinder-equipped devices, when Ballistic Switch is on, short press in the Home Screen, ballistic function and rangefinder function will be turned on at the same time; when Ballistic Switch is off, short press in the main interface, only the rangefinder function will be turned on, the ballistic function will not be activated and will not appear.



In the submenu of Ballistic Parameters, rotate to select 'Ballistic Group'. Short press to call out 7 options(A/B/C/D/E/F/G). Rotate to select the option and short press to save the setting, the default value is group A. Ballistic Group can be used to save 7 groups of ballistic data under different environments.







In the submenu of Ballistic Parameters, rotate to select 'Ballistic Coefficient' and short press to enter its setting. Rotate clockwise to increase the value by 0.001, and rotate counterclockwise to decrease the value by 0.001. You can also increase the value by 0.01 by pressing and decrease the value by 0.01 by pressing . Short press to confirm the setting after adjusting the value.



The ballistic model is a numerical model used to calculate ballistic trajectories.






Depending on the ballistic model, it is possible to predict the flight path, point of impact, and the shooting accuracy of the bullet.

It can be found in the product package box, the manufacturer's website, or the internet. If you are unsure, you can use the default option G1.

In the submenu of Ballistic Parameters, rotate  to select 'Ballistic Model'. Short press  to call out 7 options: G0/G1/G2/G5/G6/G7/G8. G1 is the default option. Rotate  to select the option and short press  to save the setting.








The weight of the bullet affects the kinetic energy of the bullet at range. It can be found on the package box or the cartridge case. If you are unsure, use a scale to measure it and be careful not to make a mistake with the units on the scale.

In the submenu of Ballistic Parameters, rotate  to select 'Bullet Weight', and rotate  or press  /  to set the value, then short press  to save the setting. The unit is Grains in the imperial system and g in the metric system.








This refers to the muzzle velocity in the trajectory, i.e. the speed of the bullet after it leaves the barrel.

Please use a timer to calculate the speed of the bullet leaving the barrel, or you can refer to the data provided by the bullet manufacturer.

In the submenu of Ballistic Parameters, rotate  to select 'Initial Velocity', and rotate  or press  /  to set the value, then short press  to save the setting. The imperial unit is ft/s, and the metric unit is m/s.



It indicates the distance between the bullet and the zeroing point.

In the submenu of Ballistic Parameters, rotate  to select 'Zero Range', and rotate  or press  /  to set the value, then short press  to save the setting. The imperial unit is Yard, and the metric unit is M.



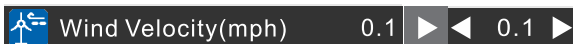
It refers to the distance between the center of the scope optic and the center of the barrel. Please use a ruler to measure it.

In the submenu of Ballistic Parameters, rotate to select 'Sight Height', and rotate or press / to set the value, then short press to save the setting. The imperial unit is Inches, and the metric unit is cm.



It represents the angle between the firearm and the ground when shooting.

In the submenu of Ballistic Parameters, rotate to select 'Shooting Angle', and rotate or press / to set the value, then short press to save the setting. The unit is deg.



The average wind **Velocity** of a bullet in flight. It can be measured with an anemometer or by referring to the data provided in the table.

In the submenu of Ballistic Parameters, rotate to select 'Wind Velocity', and rotate or press / to set the value, then short press to save the setting. The imperial unit is mph and the metric unit is m/s.



The direction of the wind blowing towards the bullet path.

0° wind angle means that the wind is blowing toward the shooter's face.

90° wind angle means the wind is blowing to the shooter's right.

180° wind angle means the wind is blowing toward the rear of the shooter.

270° wind angle means the wind is blowing to the shooter's left.

In the submenu of Ballistic Parameters, rotate to select 'Wind Angle', and rotate or press / to set the value, then short press to save the setting. The unit is deg.



Altitude(ft)

1643








1643



The height of the location from sea level. Different altitudes have different air densities, which affects the bullet trajectory.

If you don't know the altitude of your location, please use the default value of 1643 ft.

In the submenu of Ballistic Parameters, rotate  to select 'Altitude', and rotate  or press  /  to set the value, then short press  to save the setting. The Ft is the imperial unit and M is the metric unit.



Temperature(F)

59








59



Temperature changes affect the velocity and air density of the bullet during flight.

If the temperature at the current position is unknown, use the default value of 59° F.

In the submenu of Ballistic Parameters, rotate  to select 'Temperature', and rotate  or press  /  to set the value, then short press  to save the setting. The units are ° F in imperial and ° C in metric.



Barometric Pressure(in Hg)








29.9



The magnitude of the force acting perpendicular to the surface of an object in each unit area.

Barometric pressure varies not only with altitude but also with temperature. Changes in atmospheric pressure will affect the bullet's trajectory.

In the submenu of Ballistic Parameters, rotate  to select 'Barometric Pressure', and rotate  or press  /  to set the value, then short press  to save the setting. Imperial units are inHg and metric units are hPa.



Relative Humidity(%)






75.0



75.0







Air humidity affects the air resistance and stability of bullets in flight.

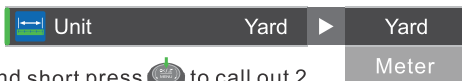
In the submenu of Ballistic Parameters, rotate  to select 'Relative Humidity', and rotate  or press  /  to set the value, then short press  to save the setting. The unit of relative humidity is %.





FFP&SFP



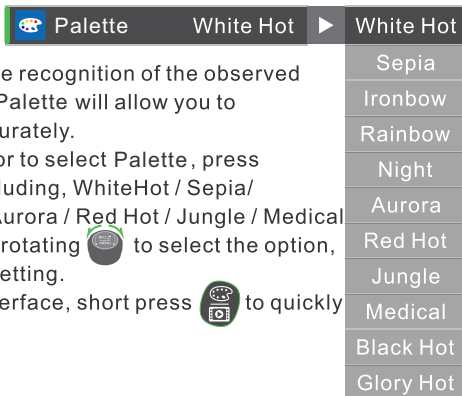
Rotate  to select 'FFP & SFP' and short press  to call out 2 options (FFP/SFP). When FFP is selected, the reticle's size will change with the magnification;
When SFP is selected, the reticle's size will not change with magnification.
Rotate  to select an option and short press  to save the setting.

Unit








Rotate  to select 'Unit' and short press  to call out 2 options (Yard/Meter). Rotate  to select an option and short press  to save setting.

Palette

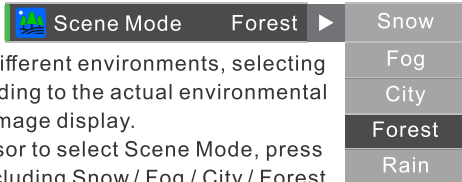


Palette is used to improve the recognition of the observed objects. Selecting different Palette will allow you to observe the object more accurately.




Rotate  to move the cursor to select Palette, press  to call out 11 options, including, WhiteHot / Sepia / Ironbow / Rainbow / Night / Aurora / Red Hot / Jungle / Medical / Black Hot / Glory Hot. After rotating  to select the option, short press  to save the setting.


Shortcut Key: In the main interface, short press  to quickly switch among false colors.

Scene Mode

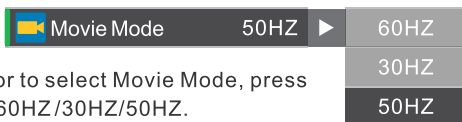




When the device is used in different environments, selecting the appropriate scene according to the actual environmental needs will result in a better image display.

Rotate  to move the cursor to select Scene Mode, press  to call out 5 options, including Snow / Fog / City / Forest / Rain. After rotating  to select the option, short press again to save setting.

Shortcut Key: In main interface, long press  to quickly switch scenes.

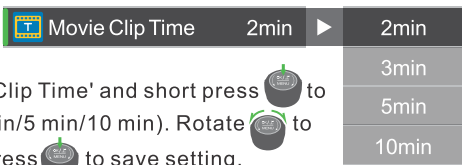
Movie Mode







Rotate  to move the cursor to select Movie Mode, press  to call out three options 60HZ/30HZ/50HZ.

After rotating  to select the option, press again to save setting.





Movie Clip Time



Rotate  to select 'Movie Clip Time' and short press  to call out 4 options (2 min/3 min/5 min/10 min). Rotate  to select an option and short press  to save setting.

Auto Record







Rotate  to select 'Auto Record' and short press  to call out the 2 options (On/Off). Rotate  to select the option and short press  to save the setting.

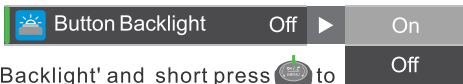
If you turn on Auto Record, the machine will automatically turn on the recording after the next power on.





Sound Record





Rotate  to select 'Sound Record' and short press  to call out the 2 options (On/Off). If Sound Record is on, the device will record a video with audio. Rotate  to select the option and short press  to save the setting.

Button Backlight










Rotate  to select 'Button Backlight' and short press  to call out 2 options (ON/OFF). Rotate  to select an option and short press  to save setting.

Shortcut: Press  and  simultaneously to turn on/off button backlight.

LCD Brightness







Rotate  to select 'LCD Brightness' and short press  to call out the setting bar. rotate  clockwise to increase the value by 5, rotate  counterclockwise to decrease the value by 5. Rotate  to select the option and short press  to save the setting.

Shortcut key: On the Home screen, short press  to adjust the LCD brightness quickly. Each short press will adjust 5 values.

Display Icon







Rotate  to select 'Display Icon' and short press  to call out 2 options (ON/OFF). Rotate  to select an option and short press  to save setting.

The default status is Off, and the status bar at the bottom of the Home screen will be hidden after 7 seconds of no operation. You can press any key to call out the status bar. When On is selected, the status bar will be displayed all the time.

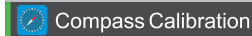
Display Widgets



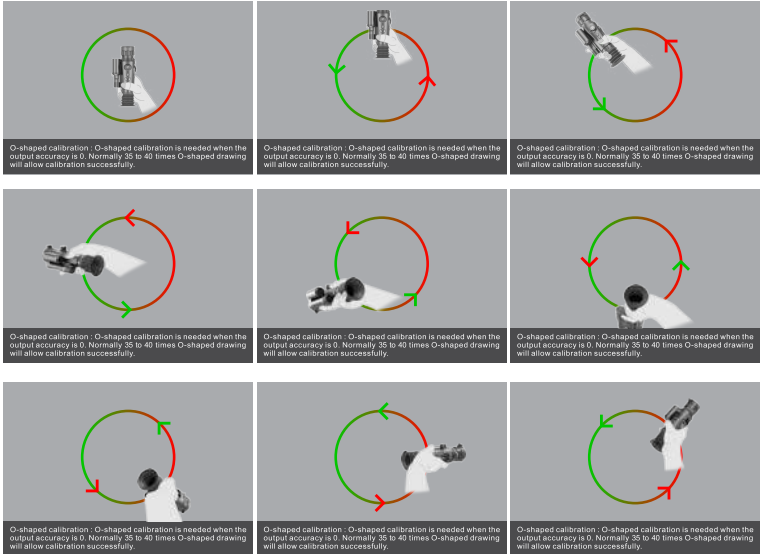
Rotate  to select 'Display Widgets' and short press  to call out 2 options (ON/OFF). Rotate  to select an option and short press  to save setting.

The system default status is On, and the real-time data of the gyroscope and E-Compass will be displayed on the Home screen; when Off is selected, the Home screen will not display the gyroscope and E-Compass data.

Compass Calibration

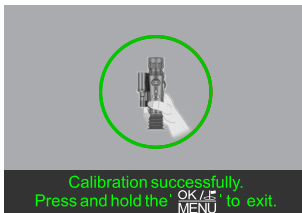


Rotate to select 'Compass Calibration', short press to enter the Compass Calibration operation page, and follow the animation to draw the letter 'O' 35-40 times for calibration. Please follow the prompts until the screen indicates calibration success or failure. Short press to exit Compass Calibration.



Sub-interface

O-shaped calibration: O-shaped calibration is needed when the output accuracy is 0. Normally 35 to 40 times O-shaped drawing will allow calibration successfully.






Calibration Successfully



Calibration Failed

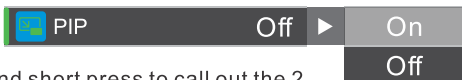
Gyro Calibration




Gyro Calibration

Rotate  to select 'Gyro Calibration' and short press  to enter the Gyro Calibration operation page. Follow the prompts and the screen will indicate the calibration success or failure after 15 to 20 seconds of horizontal placement. Short press  to exit Gyro Calibration.



PIP









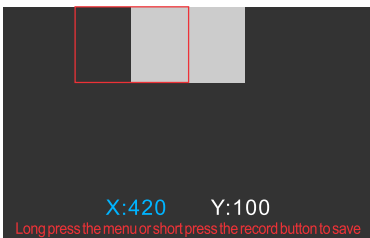
Rotate  to select 'PIP' and short press to call out the 2 options (On / Off). Rotate  to select the option and short press  to save the setting.

Shortcut key: On the Home screen, press  twice to quickly turn ON/OFF.

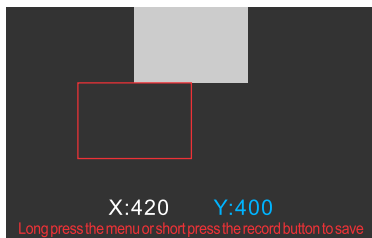
PIP Position

PIP Position

Rotate  to select 'PIP Position ' and short press  to enter its setting. Short press  to switch to X or Y, the selected coordinate and value will change from white to blue . Rotate  clockwise to increase the value and rotate  counterclockwise to decrease the value. After adjustment, long press  to save the setting.



Value X adjustment






Value Y adjustment

Shutter Correction



Shutter correction is to correct the unevenness of the image.

Regular shutter correction can make the image to maintain uniformity. In the process of shutter correction usually comes with 'click' sound. Rotate  to move the cursor to select Shutter Correction, press  to call out two options Auto /manual, rotate  to select the option, press again to save setting.

Auto: the device automatically detects the temperature of the sensor, when the change value exceeds the system setting, the shutter will be closed and the image will be paused for 1 second to carry out the automatic shutter correction operation.

Manual: the device does not carry out automatic shutter correction, users need to operate shutter correction manually.

Shortcut key: In the main interface, press  twice to perform shutter correction.




Note: When correcting, put on a lens cover or aim the device at a table or wall with even temperature.

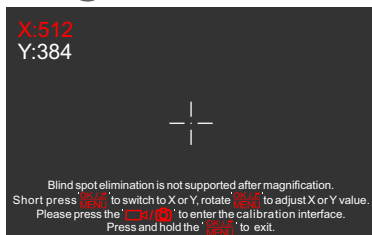
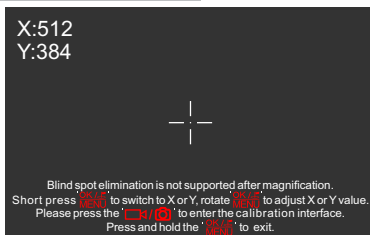
Blind calibration



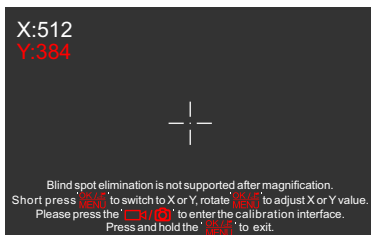
To correct the blind points in the image to maintain the integrity and clarity of the image.

Rotate  to select 'Blind calibration' and short press  to enter its setting.



Short press  to switch to X or Y, the selected coordinate and value will change from white to red. Rotate  clockwise to increase the value and rotate  counterclockwise to decrease the value.

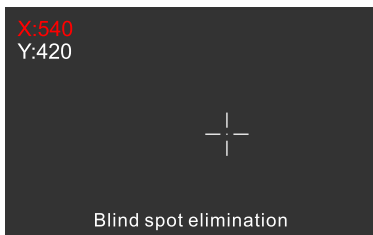


Value X adjustment

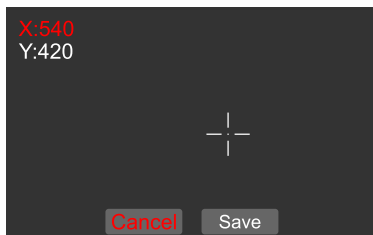


Value Y adjustment

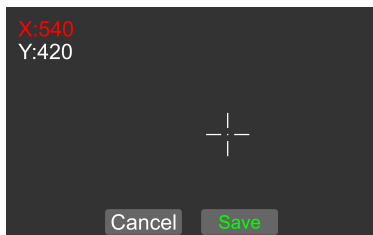
After adjusting the crosshair to the coordinates of the blind point, press  to start calibration. Rotate  to switch to **Cancel** or **Save**. If you select **Cancel**, this operation will not be saved. If you select **Save**, this operation will be saved.



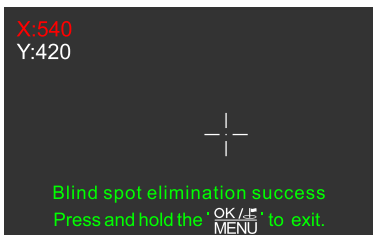
Blind calibration




Select **Cancel**



Select **Save**






Save

Press and hold the  to exit.

Prevent Burns



In order to prevent the device from being burned by hot objects, like sunlight, closing the stopper will reduce the probability of burn of the device. Rotate  to move the cursor to select Prevent Burns, press  to call out two options On/Off. After rotating  to select the option, press again to save setting.

Lid calibration

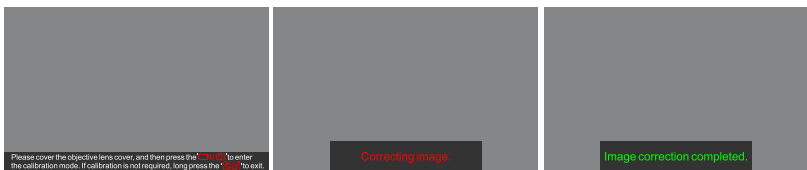


This can correct for non-uniformity of the display. During correction an internal shutter will be lowered in front of the thermal detector. A 'click' sound will often be heard, and the image is momentarily interrupted for a split second. After this quick process the detector will be re-calibrated, and the image becomes more accurate.

Rotate to move the cursor to select Lid calibration, press to enter the calibration interface, press to start calibration. After successful calibration, a prompt box appears, and device return to the menu interface.

Note: Please cover the lens cap when calibrating.

Suggestion: In order to get an ideal thermal imaging, it is recommended to calibrate the device when it is first turned on or after a long period time of using.



Lid Calibration Interface

Calibrating

Calibration succeed

Contrast



Rotate to select 'Contrast' and short press to call out setting bar. Rotate to increase the value by 1. Rotate to decrease the value by 1. Short press again to save setting.

Stamp



Rotate to select 'Stamp' and short press to call out 4 options (Date+Logo/Date/Logo/Off). Rotate to select an option and short press to save setting.



Date Format



Rotate to select 'Date Format' and short press to call out 4 options (None/YY MM DD/MM DD YY/DD MM YY).

Rotate to select an option and short press to save setting.

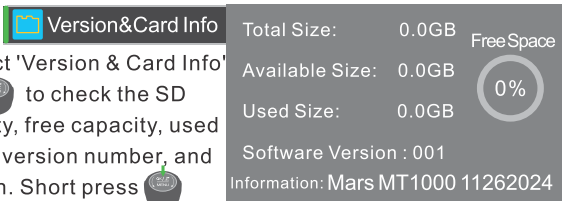


Clock Setting



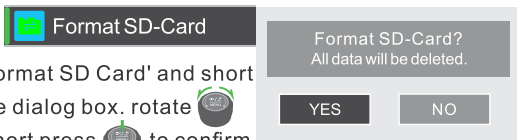
Rotate to select 'Clock Setting' and short press to enter setting. Rotate to select / / , short press to increase or decrease value, short press to save setting. You can set Year/Month/Date/Hour/Minute sequentially. Short press when you complete the clock setting.

Version&Card Info



Rotate to select 'Version & Card Info' and short press to check the SD card's total capacity, free capacity, used capacity, system's version number, and version information. Short press to return to the menu.

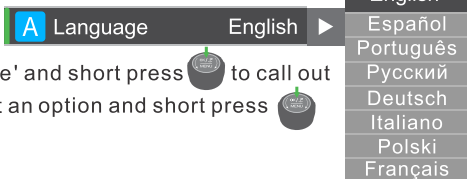
Format SD-Card



Rotate to select 'Format SD Card' and short press to call out the dialog box. rotate to select YES or NO, short press to confirm.

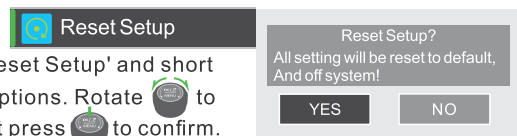
When YES is selected, all the data in the SD-card will be formatted, and "Format Complete" will be prompted when the formatting is successful; when NO is selected, it will return to the main menu.

Language



Rotate to select 'Language' and short press to call out options. Rotate to select an option and short press to save setting.

Reset Setup

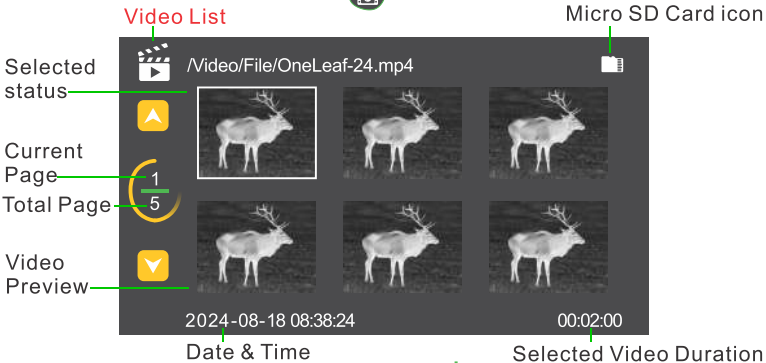









Rotate to select 'Reset Setup' and short press to call out 2 options. Rotate to select YES or No, short press to confirm. If YES is selected, all setting will be reset to default.

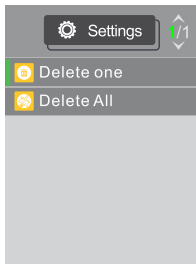
Note: The device will be turned off after reset.

PLAYBACK

Video Playback: Press and hold  button to enter Video list.

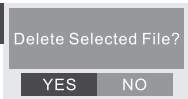


- Rotate  to select a video. Short press  to play the video, short press  to pause play. Rotate clockwise or counter clockwise to switch to previous video or next video. Short press  to return to the video playback list.
-  shows Micro SD card inserted,  shows no Micro SD card is inserted. **No file** shows No File.
- If a file is renamed on the computer, it will disappear in the playback list.
- In video playback list, press and hold  to enter playback setting.



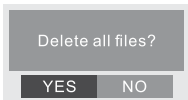
 Delete One



Choose YES to delete a selected file.



 Delete All

Choose YES to delete all files.



- Long press  to exit playback setting.
- On the video playback page, short press  again to return to the main menu.


FIRMWARE UPDATE

1. Visit the official website: www.oneleaf.ai

2. Go to 'Download' and find the correct firmware.

3. Download the latest firmware file and put it into the root directory of the Micro SD card.

4. Insert the Micro SD card into the device.

5. Make sure the device has enough power, long press  to turn on the device.

6. The screen will light up and the system will be upgraded automatically.

7. The device will enter the home screen after the firmware upgrade is done.

8. Press  to enter the menu page, and select 'Format SD-Card'.

9. Check whether the version number is upgraded to the corresponding version and reset the system.



Updating






Updated

NOTE

- Please format the Micro SD card on the device before the firmware upgrade.
- Please do not power off/unplug the microSD card during the system upgrade process.
- Please delete the upgrade file from the Micro SD card after the upgrade is completed.

TROUBLESHOOTING

- The device cannot be turned on.
The battery runs out, please charge the battery.
- Green power indicator is on, but the screen is black.
Screen is standby, short press power button  to awake the screen.
- Unevenness of screen display such as bright angle or dark angle, bright block or dark block appears after long time working.
Please cover the lens cap to perform Lid calibration.
- The device cannot be powered by an external power supply.
 - 1.Type-C cable is damaged, please replace a new cable.
 - 2.Please check whether the external power supply is insufficient.
- The screen is too dark.
Short press  to increase brightness.
- The icons on screen are clear but image is blurry.
 - 1.Rotate the objective lens ring to adjust the focus.
 - 2.Wipe off the dust or dirt on the optical surface.
- The device can not connect to the computer.
 1. Check whether the port is loose.
 2. Please make sure the Micro SD card is in MT1000 . Connect the device to the computer first, then power on the device.
- After mounting the lens, the icon on the main interface still shows 
Please make sure the electrical contacts and Bayonet Mount (Body) are clean and free of foreign objects.