

**ThermTec**



# User Manual

Thermal Imaging Scope

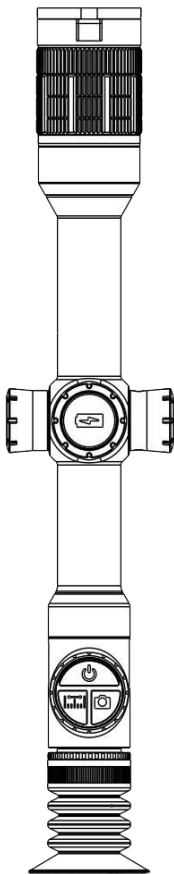
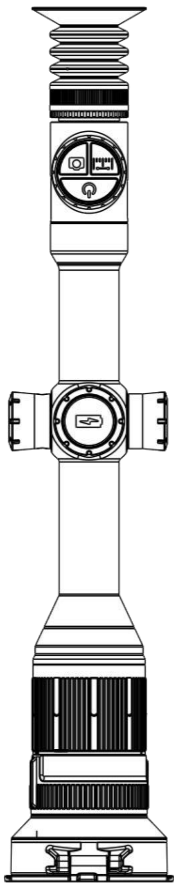
# ARES SERIES



IOS



Andriod



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# About This Manual

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This Manual is applicable to Thermal Imaging scope.

The Manual includes instructions for using and managing the product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons.

# Regulatory Information



This product and, if applicable, the supplied accessories are marked with “CE” and comply therefore with the applicable harmonized European standards listed under the Radio Equipment Directive 2014/53/EU, the EMC Directive 2014/30/EU, the RoHS Directive 2011/65/EU.



2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: [www.recyclethis.info](http://www.recyclethis.info).

# 1

## Introduction

### 1.1 Device Description

ARES Series thermal imaging scope is equipped with 12 $\mu$ m high-sensitivity detector with the resolution up to 640x512, and adopts 35mm lens and dual-field of view with the focal lengths of 20mm/60mm, 1024x768 high-definition OLED display, as well as AI image recognition algorithm, to get clear view under harsh environments, even in poor visibility or total darkness. It helps to see through obstacles hindering the detection of targets, and measure the distances. The function of easy connection to phone enables users to share views in real time.

ARES Series thermal imaging scope is designed for various areas of application including night hunting, observation, rescue operations, hiking and traveling, etc.

# 1.2 Features

## 1. Dual FOV

Using the unique dual FOV and 3× optical zoom, the user can quickly shift the dual FOV manually. A wider FOV with a focal length of 20mm is used for target search while a narrower FOV with a focal length of 60mm for target identification.

## 2. Auto Zeroing

It provides “First-Shot Auto-Zeroing” functionality, and stores up to 5 zeroing profiles for different guns while displaying zeroing coordinates, distances and type of guns, making it easy to switch guns without having to re-zero.

## 3. AI Intelligent Ranging

Based on deep learning algorithm, the animal species and object distances can be identified automatically by the scope.

## 4. Automatic Object Detection

After the wireless network is connected, the scope detects the target and sends a notification through the APP automatically to ensure that the user will never miss an object entering his/her field of view.

## 5. Shutterless Design

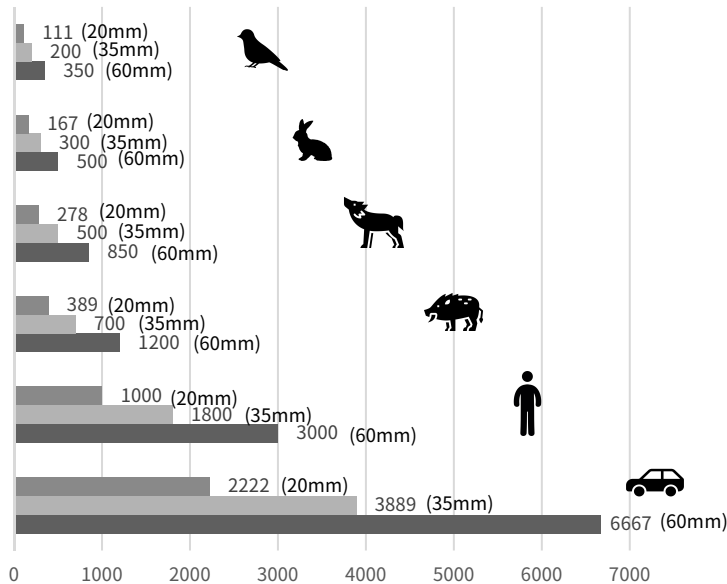
The shutterless core module is adopted to nullify the shutter calibration, which simplifies the operation and lowers the energy consumption, making the imaging quieter and linear.

## 6. Easy Battery Installation

The battery's anode and cathode can be installed interchangeably, helping users to complete the battery replacement more quickly at night.

### 1.3 Detection Range

The illustration below shows the comparative range performance of the device with different lens configurations. The data is based on detecting a car of 4m, a man of 1.8m tall, a wild boar of 0.7m tall, a wolf of 0.5m tall, a rabbit of 0.3m tall and a bird of 0.2m tall.



### 1.4 Cautions

## CAUTION



Avoid hard objects.



Do not aim the lens directly at the sun or high-temperature light sources.



Do not use the device in extremely cold or hot environment.



Charge the battery once every three months when it is not used for a long period of time.



Do not irradiate the laser indicator of the device to human eyes.



Do not disassemble or modify the device by yourself in any way.



# 2

## Packing List

Scope	1
18650 battery cap	1
18500 battery cap	1
30mm tube clip	2
USB cable	1
Eyeshade	1



Scope  
(x1)



18650 battery cap  
(x1)



18500 battery cap  
(x1)



30mm tube clip  
(x2)



USB cable  
(x1)



Eyeshade  
(x1)



# 3

## Specifications

Model	ARES 335	ARES 360	ARES 635	ARES 660
<b>Microbolometer</b>				
Type	Uncooled			
Resolution	384x288/12 $\mu$ m		640x512/12 $\mu$ m	
Spectral	8-14 $\mu$ m			
NETD	$\leq$ 35mk			
Frame rate	50HZ			
<b>Optical Specifications</b>				
Objective lens	35mm, F1.0	20/60mm, F1.0	35mm, F1.0	20/60mm, F1.0
Field of view	7.5°x5.6°	13.1°x9.8° /4.4°x3.3°	12.5°x10.0°	21.7°x17.4° /7.3°x5.9°
Magnification	3.2X	1.8X/5.5X	1.9X	1.1X/3.2X
Digital zoom	1-5X continuous zoom			
Eye relief	50mm			
Exit pupil	6mm			
Diopter	-5 ~ +5			
<b>Aiming Reticle</b>				
Click range, mm @100 m (H/V)	3,600mm/3,600mm			
Reticle	7			
Rectile color	Black and white			
<b>Display</b>				
Type	AMOLED			
Resolution, pixel	1024x768			
Display size	0.39 inch			
Color palette	6			

<b>Operational Characteristics</b>	
Max. recoil power on rifled weapon	850 Gs
Mounting brackets on weapon	Standard 30mm rings
Shooting record	Support
Auto zeroing	Support
Manual zeroing	Support
Zeroing Profiles	5
Picture-in-picture	Support
Wi-Fi	Support
AI ranging	Support
Image calibration	By lens cover
USB interface	Type-C
<b>Video Recorder</b>	
Photo/video playback	Support
Memory card	16G
<b>Battery</b>	
Replaceable battery	18650 battery or 18500 battery
Battery reverse connection	Support
Battery life	6H
<b>Environmental Characteristics</b>	
Operating temperature	-20- +50°C
IP grade	IP67

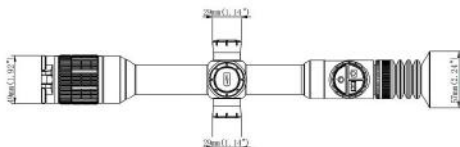
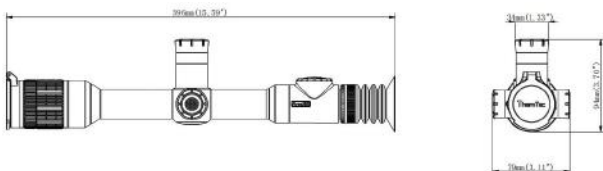
# 4

## Appearance

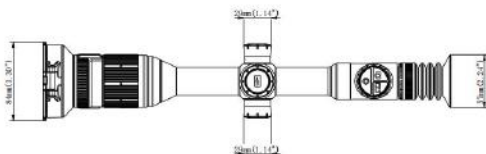
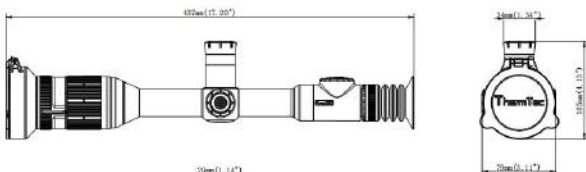
Notes: the size of battery cap marked in the drawings refers to 18650 battery cap, which can be replaced by 18500 battery cap.

### 4.1 Dimensions

**ARES 335/635**



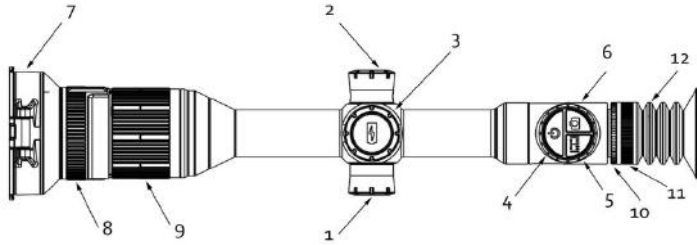
**ARES 360/660**



### 4.2 Buttons and Controls

		Short Press	Long Press	Double Press
	Power ON/OFF	Enter standby mode and screen locked	ON/OFF	N/A
	AI Rangefinder	Shift color plates	AI rangefinder function on/off	N/A
	Capture/Record	Take photos	Take videos	PIP on/off

<b>Before the entry of Main Menu</b>				
	Rotate Knob	Short Press+Rotary Knob	Long Press	Double-Press
	Zooming	Brightness/contrast adjustment	Entry of main menu	Image calibration
<b>After the entry of Main Menu</b>				
	Rotate Knob	Short Press	Long Press	Double-Press
	Up/down selection	Confirm	Exit	N/A



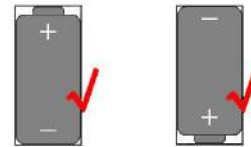
1	Rotary knob
2	USB
3	Battery slot
4	Power button
5	AI Rangefinder button
6	Capture/Record button
7	Objective Lens
8	Dual-FOV switch (for Ares360 and Ares660)
9	Objective lens focusing
10	Diopter adjustment
11	Eyepiece
12	Eyeshade

# 5

## Operation Guide

### 5.1 Battery Installation

The battery's anode and cathode can be installed interchangeably.



### 5.2 Power-on the Device



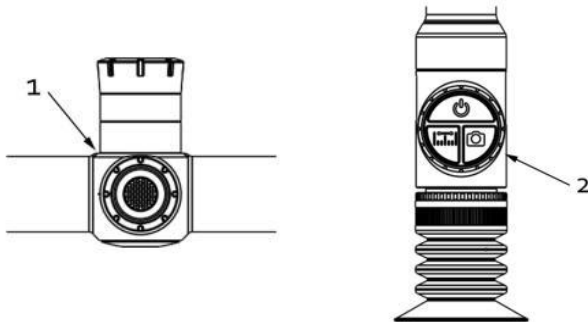
1. Power button



The screen after turning on the device

## 5.3 Menu Unlocking

Long press the middle of the rotary knob + Capture/Record button for 5 times to unlock the menu.

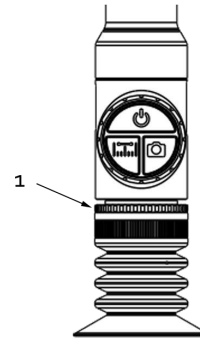


1. Long press the middle of the rotary knob.
2. Press Capture/Record button for 5 times.

## 5.4 Lens Adjustment

### 5.4.1 Diopter Adjustment

Slowly rotate the diopter adjustment ring, and adjust the position of diopter level to optimize the image sharpness on the OLED display.

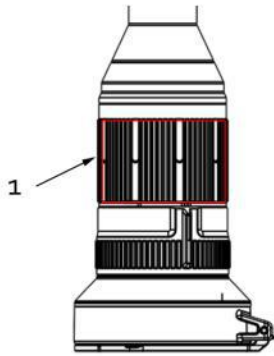


1. Rotate the diopter adjustment ring to adjust the position of diopter level.

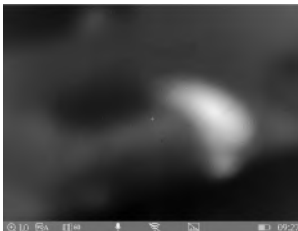
### 5.4.2 Objective Lens Focusing

Manually adjust the objective lens focusing when necessary.

Focus on the target, and rotate the objective lens until it clicks into place.



1. Rotate the objective lens for focusing.



Focus on the selected target



Focusing finished

### 5.4.3 Digital Adjustment of Focus Distance

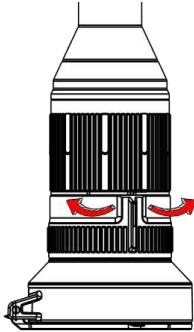
On the main screen, rotate the knob to digitally adjust the focus distance. Rotate upward for zooming in, and rotate the knob downward for zooming out.



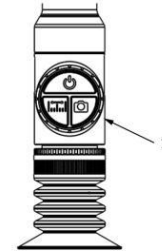
Rotate upward for zooming in, and rotate the knob downward for zooming out.

### 5.4.4 FOV Selection and Shifting (for Ares360 and Ares660)

The device is set with dual-field of view. Rotate the lens to shift the field of view from 20° to 60° or from 60° to 20°.

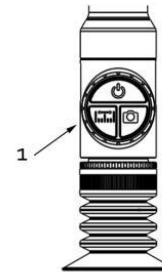


### 5.5.1 Taking photos/videos



1. Take photos - short press the Capture/Record button;  
Take videos - long press the Capture/Record button.

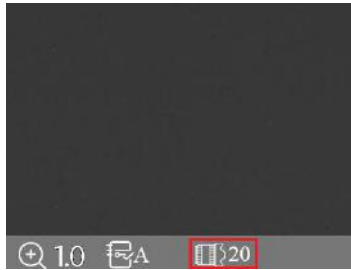
### 5.5.2 AI Ranging



1. AI Ranging - long press the AI Rangefinder button



Shift the FOV from 60° to 20°



FOV successfully shifted

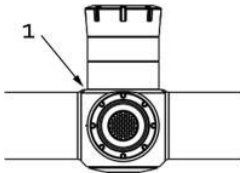
## 5.5 Shortcut Menu

### 5.5.3 Standby Mode



1. Standby mode - short press the Power button

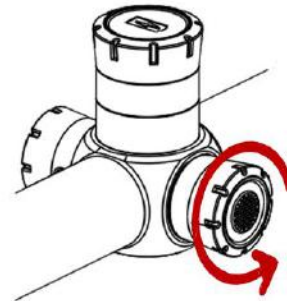
### 5.5.4 Contrast Adjustment



1. Short press the middle of the rotary knob to enter the Contrast screen.



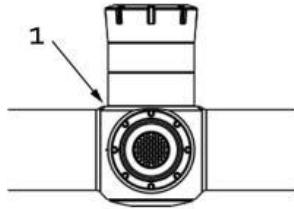
The screen of Contrast Adjustment by clicking the shortcut button



Rotate the knob to increase or decrease the contrast degree.



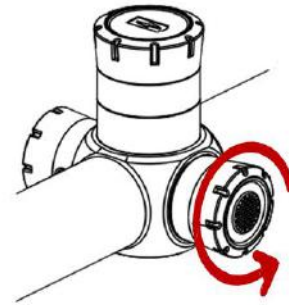
## 5.5.5 Brightness Adjustment



1. Shortcut button: short press the rotary knob to enter the Brightness screen.



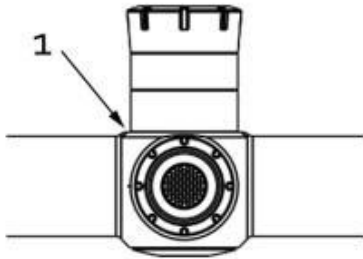
The screen of Brightness Adjustment by clicking the shortcut button



Rotate the knob to increase or decrease the brightness degree.

## 5.6 Entry of the Main Menu

Long press the middle of the rotary knob to enter the main menu. After the entry of Main Menu, short press the button for the operation of “Confirmation” , and long press the button for the operation of “Exit” . Rotating the knob is the operation of moving the cursor.



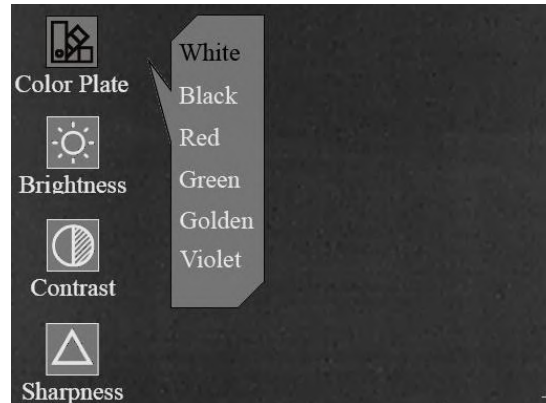
1. After the entry of Main Menu, short press the button for the operation of “Confirmation” , and long press the button for the operation of “Exit” .



Main Menu

## 5.7 Color Plate

After entering the Main Menu, select the first icon of “Color Plate” and short press the AI Rangefinder button to shift the types of Color Plate.



Color Plate

## Color Plates



White



Black



Red



Green







Golden


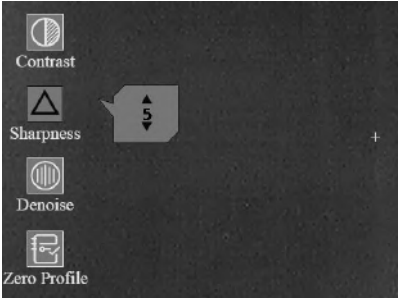




Violet

## 5.8 Image Settings


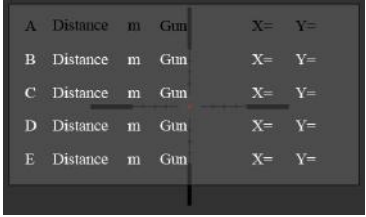

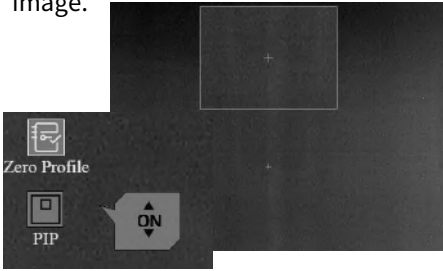
There are four sub-menus for image settings, which are “Brightness”, “Contrast”, “Sharpness” and “Denoise”. Short press the rotary knob to enter these sub-menus, and rotate the knob to adjust the images.


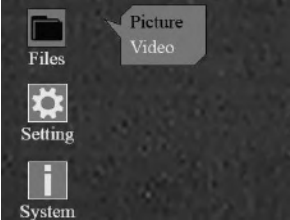


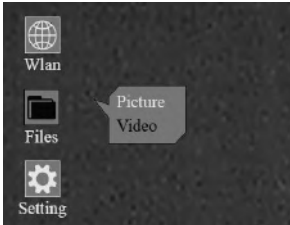



Image Setting Sub-menus		
<p>Brightness</p> 	1-10	<p>Adjust the image brightness to make the image brighter. The recommended value is 5.</p> 
<p>Contrast</p> 	1-10	<p>Adjust the image contrast to make the object more prominent in the image. The recommended value is 5.</p> 


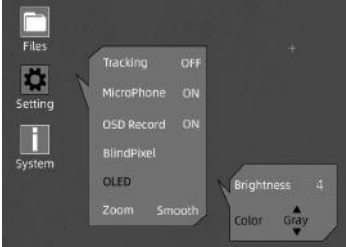
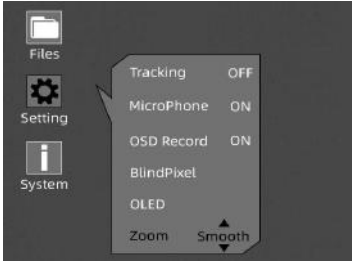

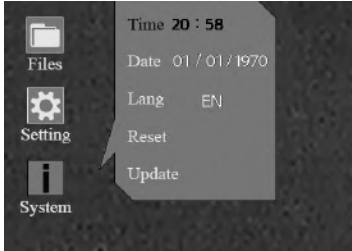
<p>Sharpness</p> 	<p>1-10</p>	<p>Adjust the image sharpness to make the edges of the image sharper. The recommended value is 5.</p> 
<p>Denoise</p> 	<p>0-10</p>	<p>Adjust the image noise to make the image cleaner. The recommended value is 5.</p> 



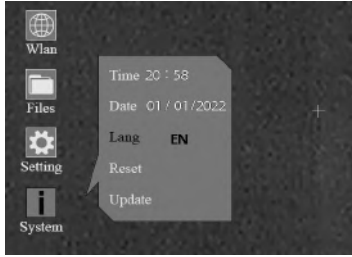
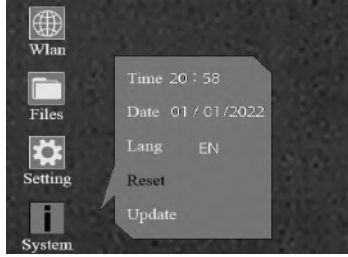
## 5.9 Settings



Short press the rotary knob to enter the sub-menus of Settings, and rotate the knob to adjust the parameters accordingly.

Sub-menus of Settings																																
<p>Zeroing profiles</p> 	<p>A-E</p>	<p>There are five zeroing profiles from “A-E” in the file folder, which contain the distance, type of bullet, and the coordinates of the crosshairs after zeroing.</p>  <table border="1" data-bbox="1044 443 1410 656"> <tbody> <tr> <td>A</td> <td>Distance</td> <td>m</td> <td>Gun</td> <td>X=</td> <td>Y=</td> </tr> <tr> <td>B</td> <td>Distance</td> <td>m</td> <td>Gun</td> <td>X=</td> <td>Y=</td> </tr> <tr> <td>C</td> <td>Distance</td> <td>m</td> <td>Gun</td> <td>X=</td> <td>Y=</td> </tr> <tr> <td>D</td> <td>Distance</td> <td>m</td> <td>Gun</td> <td>X=</td> <td>Y=</td> </tr> <tr> <td>E</td> <td>Distance</td> <td>m</td> <td>Gun</td> <td>X=</td> <td>Y=</td> </tr> </tbody> </table>	A	Distance	m	Gun	X=	Y=	B	Distance	m	Gun	X=	Y=	C	Distance	m	Gun	X=	Y=	D	Distance	m	Gun	X=	Y=	E	Distance	m	Gun	X=	Y=
A	Distance	m	Gun	X=	Y=																											
B	Distance	m	Gun	X=	Y=																											
C	Distance	m	Gun	X=	Y=																											
D	Distance	m	Gun	X=	Y=																											
E	Distance	m	Gun	X=	Y=																											
<p>Picture-in-Picture</p> 		<p>The image is enlarged by 2x as centered by the crosshairs. Picture-in-picture occupies 10% of the entire image.</p> 																														

<p>Files</p> 	<p>Picture</p>	<p>Open the sub-menu of Picture, and rotary the knob to select the images.</p> 	<p>Setting</p> 	<p>Microphone</p>	<p>Turn on the microphone for audio recording. The device takes photos automatically when cracks of shooting are detected by the microphone.</p> 
	<p>Video</p>	<p>Open the sub-menu of Video, and rotary the knob to select the videos.</p> 	<p>OSD Record</p>	<p>OSD Record</p>	<p>The menu on the screen will be recorded after turning on the OSD function.</p> 
<p>Setting</p>	<p>Tracking</p>	<p>Turn on heat tracking function to mark the hottest target on the screen in real time.</p> 	<p>OLED</p>	<p>OLED</p>	<p>The brightness of OLED can be adjusted from 1 to 5.</p> 

<p>Setting</p> 	<p>OLED</p>	<p>The color of OLED can be selected from red, blue, purple and gray.</p> 
	<p>Zoom</p>	<p><b>Smooth:</b> The speed of zooming is more even.  <b>Rapid:</b> Integer zooming, suitable for fast moving target tracking.</p> 
<p>System</p> 	<p>Time</p>	<p>Adjust the local time manually.</p> 

<p>System</p> 	<p>Date</p>	<p>Adjust the local date manually.</p> 
	<p>Language</p>	<p>The language of the current system.</p> 
	<p>Reset</p>	<p>After resetting, the configuration parameters are restored to the factory state.</p> 

System 	Update	The system of the device can be updated and upgraded. 
--	--------	--

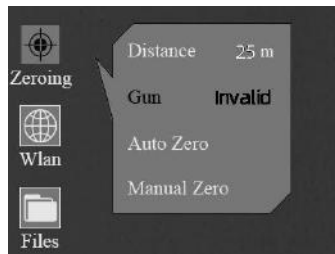


5.10 ①

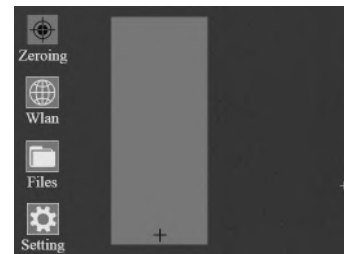
## 5.10 Zeroing

Enter the Main Menu, rotate the knob and short press the rotary knob to enter the sub-menu of Zeroing.

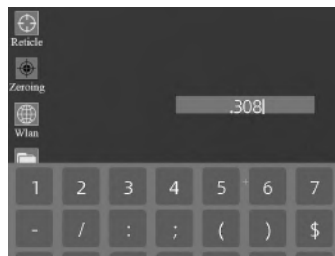
- ① Short press the rotary knob one more time. Rotate and short press the knob to select and confirm the zeroing distance (e.g. 25m or 35m).
- ② After that, move the cursor and short press the rotary knob to enter the Gun Type screen.
- ③ Rotate the knob anticlockwise until “+” appears.
- ④ Short press the rotary knob to add the Gun Type (customizable; press “Enter” on keyboard to add the Gun Type).
- ⑤ Rotate the knob clockwise and short press the rotary knob to select the Gun Type. Long press the rotary knob to return to the previous screen.



5.10 ②



5.10 ③



5.10 ④



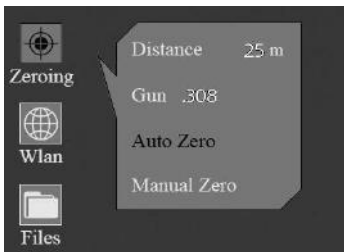
5.10 ⑤

## Notes:

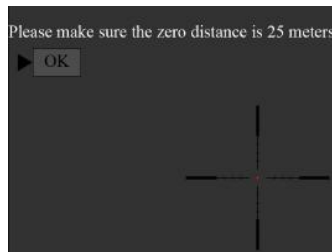
1. Zeroing at a temperature close to the scope's operating temperature is recommended.
2. The FOV of 20mm and 60mm needs to be zeroed separately with the same method. The zeroing profile for FOV of 20mm and 60mm should be kept consistent.

### 5.10.1 Auto Zeroing

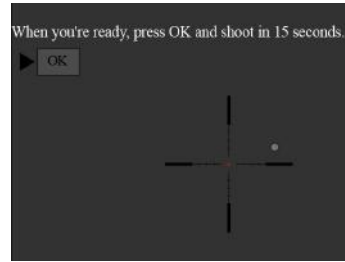
- ① Rotate the knob anticlockwise, and move the cursor to Auto Zero.
- ② Short press the rotary knob to enter the Auto Zeroing screen. Confirm the zeroing distance, and short press "OK" button to enter the next step.
- ③ When you are ready, press "OK" and finish the shooting within 15s.
- ④ Short press the rotary knob to save the zeroing data to any profile (A, B, C, D, E). Finally, long press the rotary knob to exit.



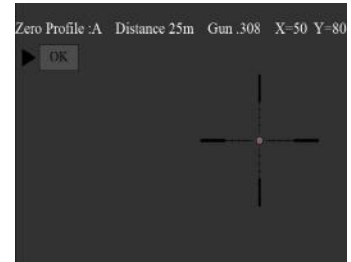
5.10.1 ①



5.10.1 ②




5.10.1 ③



5.10.1 ④

### 5.10.2 Manual Zeroing

- ① Rotate the knob anticlockwise, and move the cursor to Manual Zero.
- ② Short press the rotary knob to enter the Manual Zeroing screen, confirm the zeroing distance, and short press "OK" to enter the next step.
- ③ After your first shooting is finished, align the reticle with point of aiming, and rotate the knob to turn on the Freeze function. ❄️ A screenshot will be taken. (The Freeze function allows you to freely move or manipulate the scope without losing reticle placement on the point of aim during adjustments.)
- ④ Rotate the knob to change the magnification  when necessary, which helps to improve the accuracy of zeroing.



⑤ Adjust the coordinates (X, Y) of the reticle by rotating the knob, and move the reticle from the original position to the bullet hole position manually. (X and Y display values will change based on magnification after pressing Save button, e.g. X: -20 (1x) will display -20, -10, -4 in 1x, 2x, 5x respectively).

Short press the rotary knob to save the zeroing data to any profile (A, B, C, D, E). Finally, long press the rotary knob to exit.

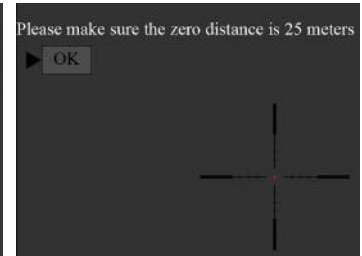
**Notes:**

1. The changes will always be saved based on your last calibration, e.g. the first saved coord is (-20, 35) in Profile A and you may want a tiny change like (-5,5), so the device finally displays (-25,40), though it displays (0,0) before your second calibration.

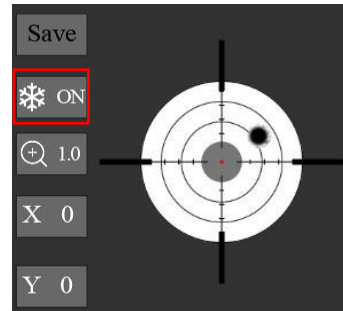
2. Please get back to the main menu to choose other profiles if you would like to save new data for another gun. It is suggested to save the subsequent changes where you first time saved for the same gun. It is not recommended to save a change in Profile A firstly then another change saved in Profile B or C.



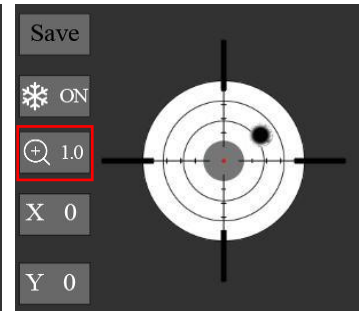
5.10.2 ①



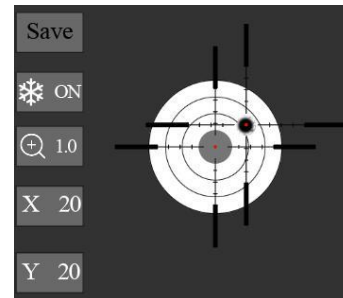
5.10.2 ②



5.10.2 ③



5.10.2 ④



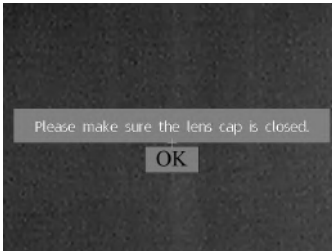
5.10.2 ⑤

## 5.11 Image Calibration (with Lens Cover Closed)

Taking advantage of the non-shutter correction technology, this device supports consistent view for shooting. In case that the sensor performance or the image quality need to be recovered or optimized, please follow below steps for image calibration.

Exit the main screen first, and then short press the rotary knob twice.

- ① A prompt will appear on the screen, reminding you to close the lens cover during image calibration.
- ② Click "OK" to start the process after closing the lens cover.

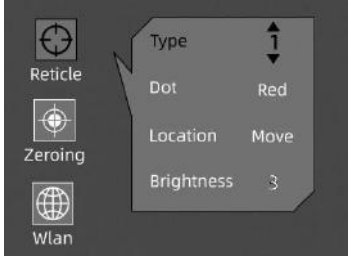
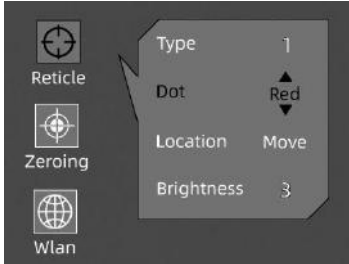


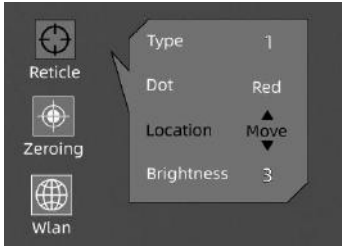

5.11 ①



5.11 ②

## 5.12 Reticles

Type	1-7	<p>Rotate the knob to select the type of reticles. There are seven types of reticles set for selection.</p> 
Dot	3 Colors	<p>Rotate the knob to adjust the color of the Dot. There are three colors for selection, i.e. red, blue, and green.</p> 

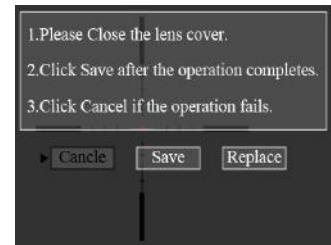
Location	Move/Center	<p>Rotate the knob to select the location of reticles. There are two options of “Move” and “Center” for selection.</p> <p><b>Move:</b> Under 1x magnification, the location of the reticle keeps the same as the zeroing coordinates. The reticles will be returned to the center of the screen when image is zoomed in.</p> <p><b>Center:</b> When zeroing is finished, the screen will be slightly enlarged based on the zeroing coordinates. The reticles will be returned to the center of the screen. When zoomed in/out, the reticle is always enlarged at the center of the screen.</p> 
Brightnesss	3	<p>Rotate the knob to select the brightness of reticles. There are three degrees of brightness set for selection.</p> 

### 5.13 Blind Pixel

- ① Short press the rotary knob to enter the sub-menu of Blind Pixel.
- ② There are three options (cancel, save and replace). Replace: the blind pixel on the screen can be replaced. When finished, long press the middle of the rotary knob to exit.



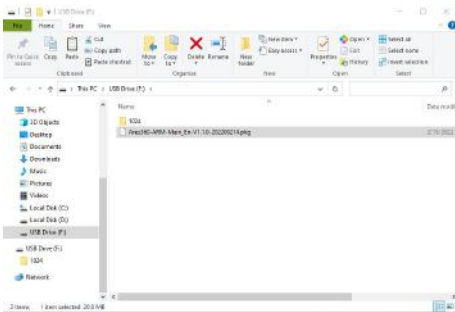
5.13 ①



5.13 ②

### 5.14 Updates

- ① Connect the device to the computer, and drag the updating file to the file folder. The device should be connected all the time.
- ② Enter Settings menu, select Update, and the system will prompt “Program Updating” .
- ③ When the update is finished, the device will automatically restart.



5.14 ①



5.14 ②



5.14 ③

## 6 APP Download

You can search "Smart Thermal" in Apple or Google Play APP Store to download our APP, or you can download it through the QR code shown on the packing box or user manual.

## 7 WIFI and Hotspot Settings

### 7.1 Connect via WIFI

Move the cursor to choose the icon of WLAN. You can select the sub-menus of Wi-Fi and Hotspot to make adjustments.

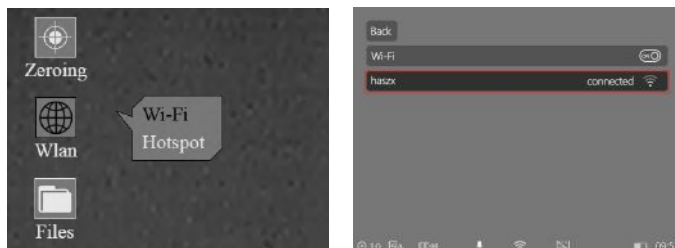
Steps are shown as below:

- ① Turn on personal hotspot on your phone;

② Enter the sub-menu of Wi-Fi, and the device will search for network Wi-Fi nearby. Choose the Wi-Fi to be connected, and enter the password to connect by rotating the knob. After it shows successful connection, you can open the mobile APP to view the images remotely.



Turn on personal hotspot on your phone.



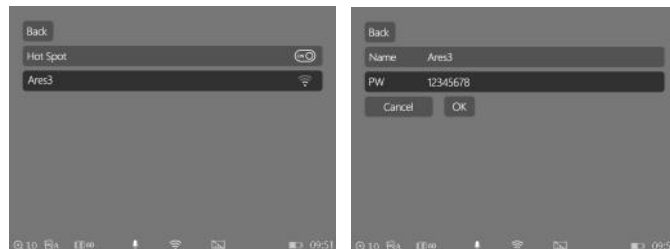
Successful WIFI Connection

## 7.2 Connect via Hotspot

Enter the sub-menu of Hotspot. One hotspot network will be released by the device. Set the hotspot name and password, and confirm by rotating the knob. Search the hotspot for connecting the device by phone, and open the phone APP to view the images remotely.



Connect the ARES Hotspot on your phone.



Successful Hotspot Connection