

PARD



User Manual
Europe & Global

Thermal Imaging
TS3x Series



Standard Version



Rangefinder Version

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- 1 Extend warranty
- 2 Enjoy 1 on 1 expert service
- 3 Get the product experience officer opportunity

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TO USERS

Thank you for your ongoing support and for selecting the PARD TS3x series thermal imaging device. Prior to initial use, please carefully review this manual and adhere to its instructions in order to prevent any damage resulting from improper usage and ensure optimal performance of your device.

After reading, please store this manual in a secure location for future reference. This manual provides detailed instructions on how to operate your thermal imaging device and is intended solely for your use as a reference guide.











PARD reserves the right to modify this manual without prior notice to individual users. For the latest information, we recommend visiting PARD's official website. The final interpretation of this manual is reserved by PARD.

PRECAUTIONS

- Please ensure that the insulating tape on the battery is removed prior to initial use. We recommend using a fully charged lithium-ion battery with a rated voltage of 3.7V.
- When the device is not in use for more than 10 days, please power it off and remove the battery. Store both the device and battery in a dry and secure location.
- Be extremely cautious and handle the device with utmost care during usage or transportation. It is recommended to utilize the original packaging for transportation purpose.
- Refrain from directing the device towards intense light sources, such as the sun or electric welding. Doing so may result in damage to the detector and voiding the warranty.
- Refrain from lens scratches and damage caused by oil or chemical contamination of the lens. Ensure to keep the lens cap on when not in use.
- The device should be situated in a well-ventilated area with minimal electromagnetic interference, and the storage temperature must remain within the range of -5°F/-20°C to 120°F/50°C.
- Do not attempt to disassemble the device without proper authorization. In case of any issues, please contact our after-sales team and report them on our official website. Failure to comply with these instructions will result in nullification of the warranty service.

- **Attention !** Export of all PARD night-vision and thermal imaging devices outside your country requires a license .

PACKAGE CONTENTS

Icon	Contents	Quantity
	Thermal imaging device	1
	3.7V 18650 Rechargeable lithium-ion battery	1
	Protective case	1
	Type-C cable	1
	STD mount rings	2
	Allen wrench	2
	Cloth	2
	Rubber eye cup	1
	User's manual	1
	After sales card	1

DESCRIPTION & KEY FEATURES

The TS3x has a traditional day scope exterior while also serving as a multifunctional thermal imaging device with cutting-edge technology. Staying ahead of the curve, the TS3x pioneers the innovative use of an 800*800 circular IPS display. Combined with a highly sensitive 12 μ m, NETD \leq 25mK thermal imaging sensor (TS31 NETD \leq 35mK), the scope is capable of detecting subtle temperature differences resulting in higher image resolution and clarity. Users have the option to choose between 640*480 or 384*288 resolution to suit their specific needs. With the inclusion of a ballistic calculator and a 1000m/1200 yds laser range finder(LRF) unit, users can improve their accuracy and hunt smarter with advanced technology.

Key Features

- 1 Long eye-relief display system (LEDS)
- 2 800*800 IPS ultra-clear display
- 3 Circular in the scope display
- 4 High sensitivity 12 μ m LWIR sensor
- 5 Fast detection 1000m/1200yds LRF
- 6 Accurate ballistic calculator
- 7 Multiple objective lens
- 8 Infrared image enhancement algorithm (IREA)
- 9 Intuitive control knob
- 10 Self-activated recording
- 11 Three scene modes: City / Forest / Rain
- 12 WiFi
- 13 IP67 rating
- 14 6000J recoil resistance

SPECIFICATIONS

Model	TS31/TS31 - LRF	TS62/TS62 - LRF
Sensor		
Resolution(pixel)	384*288	640*480
Pixel size(μm)	12*12	12*12
NETD(mK)	≤35 (0.035°C)	≤25 (0.025°C)
Frame rate(Hz)	50	50
Human detection distance(m)	800/1100/1400/1700	1200/1500/1800
Vehicle detection distance(m)	1800/2200/2600/3000	2500/2900/3300
Optics		
Objective lens(mm)	19/25/35/45	25/35/45
Optical magnification(x)	1.7/2.2/3/4	1.3/1.7/2.4
Digital zoom(x)	2/4/6	2/4/8
Field of view (horizontal)	10.4°/7.9°/5.6°/4.4°	13.1°/9.4°/7.3°
Field of view (vertical)	10.4°/7.9°/5.6°/4.4°	13.1°/9.4°/7.3°

Model	TS31/TS31 - LRF	TS62/TS62 - LRF
Field of view (diagonal)	14.7°/11.2°/8°/6.3°	18.5°/13.3°/10.4°
Exit eye relief(mm)	100	100
Diopter adjustment(D)	+5/-3	+5/-3
Display		
Type	IPS LCD	IPS LCD
Resolution(pixel)	800*800	800*800
Reticle color	4(Red/White/Yellow/Green)	4(Red/White/Yellow/Green)
Scene mode	City/Rain/Forest	City/Rain/Forest
Image mode	WhiteHot/BlackHot/RedHot/Fusion1/Fusion2/ IronRed1/IronRed2	WT-HOT/BK-HOT/RD-HOT/EDGE/IN-HOT/SKY
Photo / Video		
Photo resolution(pixel)	1536*1536	1536*1536
Photo format	JPG	JPG
Video resolution(pixel)	768*768	768*768
Video format	.MP4	.MP4
Storage(GB)	TF card (max 128)	TF card (max 128)

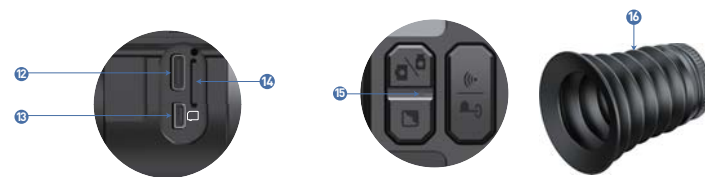
Model	TS31/TS31 - LRF	TS62/TS62 - LRF
Image engine	Pard IREA	Pard IREA
Main Function		
LRF detection range(m/yds)	1000/1200	1000/1200
PIP	Yes	Yes
Gyroscope	No	Yes
Loop recording	Yes	Yes
Red dot	Yes	Yes
Hot track	No	Yes
Shutter	Mechanical shutter	Mechanical shutter
Microphone	Yes	Yes
Firmware upgrade	Yes	Yes
Power Supply		
Battery type	Li-ion Battery 18650*1	Li-ion Battery 18650*1
Output voltage(V)	3.7	3.7

Model	TS31/TS31 - LRF	TS62/TS62 - LRF
Operating time(h)	≤6	≤5
External power supply	Type-c	Type-c
Connection		
WiFi	Yes	Yes
Supported Apps	PardVision	PardVision
Environmental characteristic		
Degree of protection	IP67	IP67
Operating temp(°C/°F)	-20 ~ 50/-5 ~ 120	-20 ~ 50/-5 ~ 120
Material		
Housing	Aluminum alloy	Aluminum alloy
Objective lens	All-glass multi-coated lens	All-glass multi-coated lens
Measurement		
Product dimension (L * W * H, mm)	350*88*95(without Long eyepiece) 410*88*95(with Long eyepiece)	350*88*95(without Long eyepiece) 410*88*95(with Long eyepiece)
N.W/pcs (without battery, g)	610(with LRF) 530(without LRF)	610(with LRF) 530(without LRF)

G.W/pcs (without battery, kg)	1.405	1.485
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COMPONENTS & CONTROLS





No.	Name	No.	Name	No.	Name
1	Lens cap	7	Control knob	13	HDMI port
2	Objective lens	8	Power/Sleep button	14	TF Card slot
3	Focus lever	9	Button panel	15	Power indicator
4	Laser rangefinder (only for LRF version)	10	Diopter adjustment ring	16	Rubber eyepiece
5	Battery cap	11	Eyepiece lens		
6	Battery compartment	12	Type-C charging port		

INSTALLATION

1. Unboxing

Before using this device, please follow these steps:

- 1 Unbox and remove the device.
- 2 Verify that all of the package contents listed above are included in the box.
- 3 Inspect the device for any damage to its display, body, lens, buttons, etc.
- 4 Ensure that both the objective lens and eyepiece are clean and functioning properly.

Note: If any accessories are missing or damaged, please contact our after-sale service team.

2. Battery Installation And Startup

The battery installation steps are as follows:

2.1 Unscrew the battery cap counterclockwise and remove the battery.



2.2 Remove the insulating tape.



2.3 Insert the battery, ensuring that the positive (+) side goes in first and tighten the battery cap clockwise.



2.4 To turn on the device, press and hold the power button for approximately 3 seconds. (Once the power light illuminates and the PARD Logo appears on the screen, the device is ready for use.)



Note:

- 1 Please utilize a single 18650 rechargeable lithium-ion battery with a voltage rating of 3.7V.
- 2 Refrain from exposing the battery to fire.
- 3 Submerging the device in water while the battery cap is open.
- 4 Do not disassemble the device without authorization.
- 5 Do not pierce the device with sharp objects.
- 6 Battery should be kept out of the reach of children, and the positive and negative terminals of the battery must be installed correctly.

3. Mount Installation

To ensure optimal user experience, we highly recommend utilizing the original mount provided in the product packaging, as shown in Picture 1.



Picture 1

- 1 Take the thermal imaging device, two scope rings and an Allen wrench out of the box.
- 2 Use the Allen wrench to unscrew the ring tops and loosen the screws on the bottom half of the mount.
- 3 Attach the bottom half of your rings to the rail.
- 4 Tighten the screw on the rear mount to your rail until it reaches the desired position.
- 5 Place the scope in the scope rings. The scope should slide with minimum resistance.
- 6 Install the ring tops and tighten down the screws, ensuring that the scope remains level.

4. Diopter Focusing

Diopter focusing is utilized to accommodate users with varying degrees of visual correction , enabling them to clearly perceive the displayed content on the screen as depicted in Picture 2.

- 1 After powering on the device, adjust the diopter focusing wheel until the screen is clearly visible.
- 2 Once you can see both the crosshair and text on the display with clarity, the diopter focusing setting has been successfully completed.

Note: After diopter adjustment, the image may still appear unclear due to the need for objective lens focusing.



Picture 2



Picture 3

5. Objective Lens Focusing

- 1 Ensure completion of diopter focusing before adjusting the objective lens.
- 2 Focus on the object and adjust the objective focusing wheel until a clear image of the target is visible as shown in Picture3.

6. Compass Calibration

Once the eyepiece has been focused, please utilize the "figure 8 pattern method" to calibrate the electronic compass. It is necessary for users to tilt and move the device in a figure 8 motion until calibration of compass is achieved, as shown in Picture 4.



Picture 4

7. Zeroing (Reticle Adjustment)

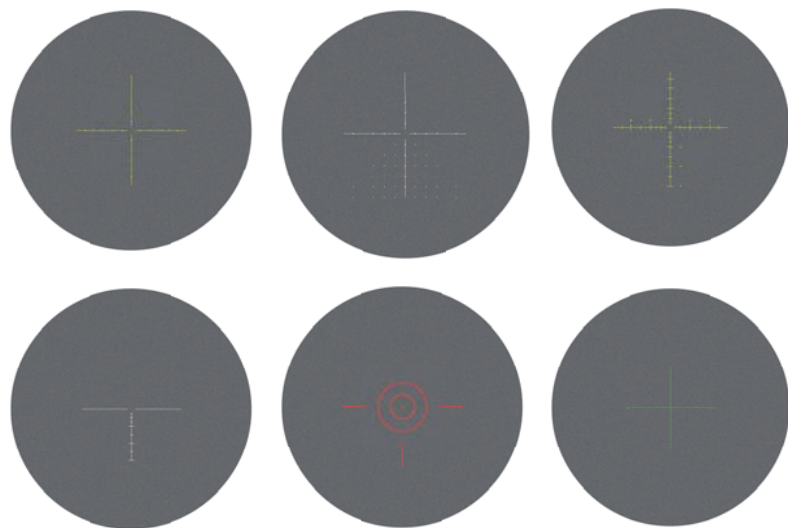
Reticle Adjustment is the process of aligning the reticle with the point of impact at a specific zeroing distance, ensuring that the aiming point corresponds accurately with the bullet's impact location, as shown in Picture 5.

1. Interface explanation



Picture 5

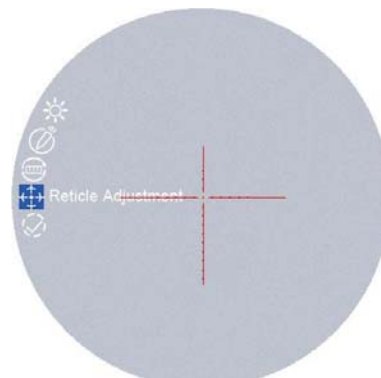
- The initial item in the sub-menu represents the saved "zero" setting, comprising of 5 profiles labeled A through E.
- "X" represents the X axis of the cross line.
- "Y" represents the Y axis of the cross line.
- Style corresponds to the crosshair type (6 options available).
- Color corresponds to the color of the cross line (red/white/yellow/green), as shown in Picture 6.
- Under the Save option, "Y" means to SAVE, and "N" means DO NOT SAVE.



Picture 6

2. Zeroing steps

- 1 **Set the target:** Reposition the target at the zeroing distance and verify that the device is capable of acquiring a high-quality image.
- 2 **Enter to reticle adjustment (Zeroing page):** In the home screen mode, press [Key 1] to access the shortcut menu mode and rotate the [knob] counterclockwise to move the cursor to the reticle adjustment setting option. Press [Key 1] to enter the sub-menu interface.[Key 1] to enter the sub-menu interface, as shown in Picture 7.



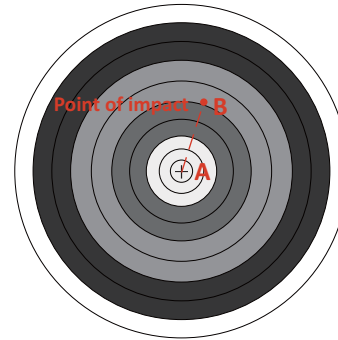
Picture 7

3 **Profile setting:** Upon accessing the zeroing page, select "RTZ" items from A-E to establish a new zeroing profile or modify an existing one, as shown in Picture 8.



Picture 8

4 **Shoot:** Take the first shot at the center of the target and ensure that a distinct point of impact is visible on the screen after firing, as shown in Picture 9.



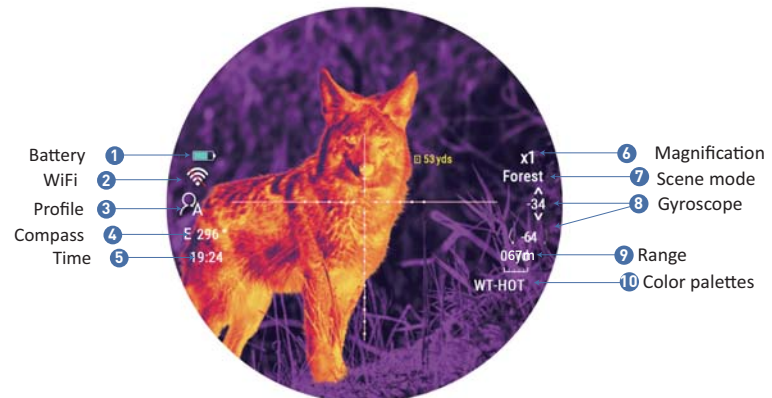
Picture 9

5 **Adjust zero value:** Keep the scope steady after shooting, and then press the [knob] to move the cursor to the "X" and "Y" items. Rotate the [knob] to freeze the screen and adjust the values of "X" and "Y" until the reticle center point aligns with the impact point on display.

6 **Save and exit:** Rotate [knob] clockwise to set the "Save" item to "Y". Once the setting is complete, press and hold [Key 1] to save and exit. The actual point of impact will be shifted to the center point of the reticle. (The reticle always remains at the center of the screen, maximizing the utilization of the entire observation field.)

Note: For the horizontal direction, you can align the center of the reticle with the point of impact by adjusting X value. This will shift the background image and the reticle is always horizontally centered after zeroing. For the vertical direction, you can adjust Y value to move the position of the reticle on the Y axis to align the center of the reticle with the point of impact).

Operation Instruction



Picture 10

1. Shortcut Mode



Picture 11

	Rotate counterclockwise	Rotate clockwise	
Knob (Key1)	Down/-/hide homescreen icons	Up/+/Zoom	-
	Single press	Press and hold	Double press
	Quick menu/ok	Full menu	PIP
	Single press	Press and hold	Double press
Key2	Color palettes	Scene modes	-
Key3	Take a photo	Record video	Files
Key4	LRF/Ballistic calculator/Back	WiFi	Shutter correction

Operation Guide

Key 1

1. Single press:

- ① **Home screen mode:** press [Key 1] to enter the shortcut menu.
- ② **Menu mode:** press [Key 1] means confirm.

2. Press and hold:

Home screen mode: press and hold [Key 1] to enter the full menu.

3. Double press:

Home screen mode: double press [Key 1] to turn on/off the picture-in-picture function.

4. Rotate counterclockwise:

- ① **Home screen mode:** rotate the [knob] counterclockwise to hide/show home screen icons.
- ② **Menu mode:** rotate the [knob] counterclockwise to scroll down between menu options. In the parameter setting interface under the sub menu, rotate the [knob] counterclockwise to decrease the values.

5. Rotate clockwise:

- ① **Home screen mode:** rotate the [knob] clockwise to switch the magnification.
- ② **Menu mode:** rotate the [knob] clockwise in the menu option interface to switch menu options upward. In the parameter setting.

Note: The [knob] has slow rotate (Step 1)/fast rotate (Step 2).

Key 2

1. Single press:

Home screen mode: press [Key 2] to switch between image mode: WT-HOT/BK-HOT/EDGE/RD-HOT/IN-HOT/SKY.

2. Press and hold:

Home screen mode: press and hold [Key 2] to switch between city/forest/rain scene modes.

Key 3

1. Single press:

Home screen mode: press [Key 3] to take a photo.

2. Press and hold:

Home screen mode: press [Key 3] to record a video. Press and hold [Key 3] again to save the video and exit.

3. Double press:

Home screen mode: double press [Key 3] to enable the playback function. After entering this interface, the video and picture files in the memory card will be displayed.

- ① Rotate the [knob] to switch between files.
- ② Press [Key 1] to play/pause the saved videos.
- ③ When playing videos, rotate the [knob] to fast forward or rewind 2x/4x/8x times.
- ④ Press [Key 4] to access the following settings.

1)Delete:

- Delete current
- Delete all

2)File protection:

- Lock current
- Unlock current
- Lock all
- Unlock all

3)Slide Show:

- Two seconds
- Five seconds
- Eight seconds

⑤ Press and hold the [Key 4] to return.

Key 4

1. Single press:

① **Home screen mode:**

- Press [Key 4] to start the range detection function (For LRF version, the distance will be measured and displayed automatically. For non LRF version, the distance is not measured automatically and will display "[0]m or [0]yds". You need to manually input the target distance value by rotating the [knob]).
 - Press [Key 4] a second time to turn on the ballistic indicator (when the ballistic calculator is turned off, the range indicator is turned off).
 - Press [Key 4] a third time to turn off the ballistic indicator; (when the ballistic calculator is turned on) .
- ② **Menu mode:** press [Key 4] to return to the previous page.

2. Press and hold :

Home screen mode: press and hold [Key 4] to turn on/off the Wi-Fi function.

Note: When the WiFi is turned on, you cannot access the menu. Press and hold [Key 4] to turn off the Wi-Fi and then enter the menu interface.

3. Double press:

Home screen mode: double press [Key 4] to start the shutter correction function (To use this short cut key function, you must first enable the auto shutter in the menu).

2. Menu Mode

Home screen mode: press [Key 1] to enter the shortcut menu mode. Press and hold [Key 1] to enter the full menu setting mode to set various function options (the shortcut key function is invalid at this time).

2.1 Image Setting

Users can adjust the image contrast, brightness, detail, sharpness and mode under this setting, as shown in Picture 12.

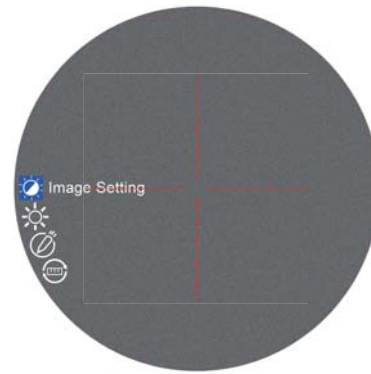
- ① Rotate the [knob] counterclockwise to move the cursor to the image setting option, press [Key 1] to enter the sub-menu.
- ② Press [Key 1] to switch between contrast / brightness / detail / sharpness / mode options, and rotate the [knob] to adjust the option value.
- ③ Press and hold [Key 1] to exit. Upon the next startup, the device will maintain the saved image settings.

Image default settings: contrast value is 105, brightness value is 60, detail is 5, sharpness is 2 and the mode value is 0.

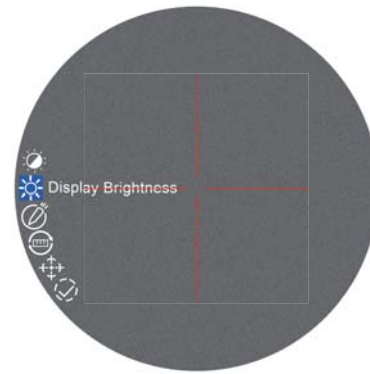
2.2 Display Brightness

Users can adjust the display brightness of the screen to adapt to different surroundings, as shown in Picture 13.

- ① Rotate the [knob] counterclockwise to move the cursor to the display brightness option, press [Key 1] to enter the sub-menu.
- ② Rotate the [knob] to move the cursor to select "Level 0" / "Level 1" / "Level 2" / "Level 3" / "Level 4" / "Level 5" / "Level 6" options.
- ③ Press [Key 1] to save and return to the previous page.



Picture 12



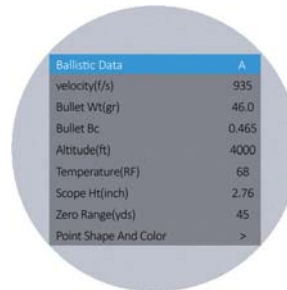
Picture 13

3. Ballistic Calculator

The ballistic calculator can calculate bullet trajectories and give you a precise aiming point enabling you to accurately place your shot. The device supports five profiles allowing you to use the scope on multiple rifles, as shown in Picture 14.

- ① Home screen mode: press [Key 1] to enter the shortcut menu mode.
- ② Rotate the [knob] to move the cursor to the ballistic calculator setting option, press [Key 1] to enter the sub-menu.
- ③ Rotate the [knob] to move the cursor to select "parameters" or "on/off" and then press [Key 1] to save or enter.
- ④ After entering the ballistic calculator parameters sub-menu, press [Key 1] to scroll up or down to the parameters option you want to change. Rotate the [knob] to adjust the value of the corresponding parameter.

Parameter settings guide:



Ballistic Data	A
velocity(f/s)	935
Bullet Wt(gr)	46.0
Bullet Bc	0.465
Altitude(ft)	4000
Temperature(RF)	68
Scope Ht(inch)	2.76
Zero Range(yds)	45
Point Shape And Color	>

Picture 14

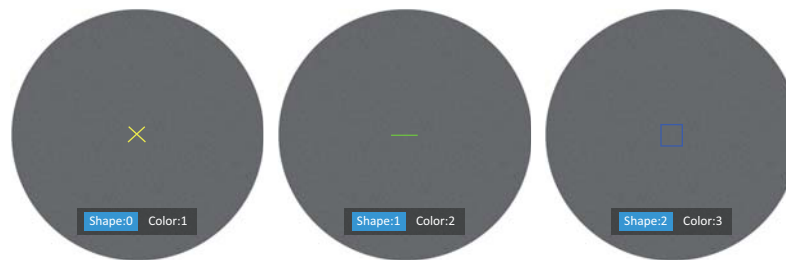
The first step in using ballistic calculator is to fill out the Profile that is being used with all relevant data such as target velocity, bullet weight and zero range.

Ballistic data: There are 5 sets of ballistic data profiles (A-E) that can be saved.

—To create a new profile, rotate the [knob] clockwise to switch from (A-E)

—Rotate the [knob] counterclockwise, to go backwards from profile (E-A)

- **Velocity:** The measurement of bullet travel speed after it is fired from your rifle, expressed in "meters per second" (m/s) or "feet per second" (f/s), which can be measured by using professional testing equipment.
- **Bullet Wt:** Refers to the weight of the bullet, expressed in "grams" (g) or "grains" (gr), which can be obtained from the manufacturer's specifications of the bullets purchased.
- **Bullet BC:** Refers to bullet ballistic coefficient which is a measure of the bullet's ability to overcome air resistance in flight. Data can be obtained from the manufacturer's specifications of the bullets purchased.
- **Altitude:** Refers to the altitude of the location, expressed in "meters" (m) or "feet" (ft), which is one of the important indicators affecting air density in ballistic calculation, which can be measured by using professional testing equipment.
- **Temperature:** Refers to the local temperature, expressed in "Celsius" (°C) or "Fahrenheit" (°F), which is also one of the important indicators affecting air density in ballistic calculation, which can be measured by using professional testing equipment.
- **Scope Ht:** Refers to the height difference between the optical axis of the sight and the barrel, expressed in "millimeters" (mm) or "inches" (inch), which can be measured by using professional testing equipment.
- **Zero range:** Refers to the unit distance expressed in "meter" (m) or "yard" (yard), usually set to 100m or 100yds, users can adjust according to their own preferences.
- **Point Shape and Color:** There are three shape options as well as yellow/green/blue color options to customize the ballistic calculator to suit your personal needs, as shown in Picture 15.



Picture 15

- Rotate the [knob] clockwise to enter the shape and color setting interface.
- Press [Key 1] to switch between shape options and color sub-options.
- Rotate the [knob] to select the desired shape and color.
- Press [Key 4] to confirm and return to the previous page.

⑤ After adjusting your preferred settings, press and hold [Key 1] to save and return to the home screen. Press [Key 4] to exit without saving.

- Note:**
1. By setting the "meter" or "yard" in the range unit selection sub-menu, the metric or imperial units of the parameters related to the ballistic calculator will be updated automatically.
 2. If you do not know all or part of this information (for example, bullet weight), we recommend contacting the manufacturer of the ammunition and/or weapon that you are using. In most cases, this information can be found on the manufacturer's specifications of the product purchased.

4. Range Unit Selection

Users can switch between "meter" or "yard" and the range unit can be updated instantly to meet the user's preference.

- ① Rotate the [knob] counterclockwise to move the cursor range unit selection option, and press [Key 1] to enter the sub-menu.
- ② Rotate the [knob] to choose between "meter" or "yard", then press [Key 1] to save and return to the previous page.

5. Reticle Adjustment

Reticle Adjustment refers to aligning the reticle with the point of impact at a zeroing distance, so that the position of the aiming point at this specific distance corresponds with the point of impact of the bullet.

- ① Rotate the [knob] counterclockwise to move the cursor to the reticle adjustment setting option. Press [Key 1] to enter the sub-menu interface.
- ② Press [Key 1] to switch sub-menu options. Rotate the [knob] to adjust the value of the corresponding item (please see the detailed instructions from above zeroing steps).
- ③ After selecting your preferred settings, there are two saving methods: 1. Set "Yes" under Save option, press the [Knob] to save and exit. 2. No matter whether "Yes" or "No" under Save option, press and hold the [Knob] also means to save and exit.

6. Shutter Correction

The heat generated by the detector itself will affect the imaging effect of the device. Through the shutter mode, the device will detect any slight heat changes which exceed a set range, deviation will cause the shutter to automatically close and the device will perform self-calibration. This will improve edge to edge clarity on the image.

Auto shutter: The system detects the temperature value of the sensor simultaneously. When the change value exceeds the system setting, the shutter will close and pause the image for about 1 second to perform self-calibration operation.

Shutterless: The system detects the temperature value of the detector chip in real time, and uses the built-in algorithm to calibrate the image in real time.

- ① Rotate the [knob] counterclockwise to move the cursor to the shutter mode setting option, and press [Key 1] to enter the sub-menu.
- ② Rotate the [knob] to move the cursor to select "Auto shutter" and "Shutterless" option.
- ③ Press [Key 1] to save and return to the previous page.

7. Gyroscope

This function measures the orientation of the device so that the yaw and pitch angles of the device can be displayed and calibrated.

- ① Rotate the [knob] counterclockwise to move the cursor to the gyroscope setting option, and press [Key 1] to enter the sub-menu.
- ② Rotate the [knob] to select "Display" or "Calibration", and then press [Key 1] to enter.
- ③ "Display" indicates whether (or not) to display the yaw and pitch angle of the device on the home screen. Rotate the [knob] to select "Off" or "On", and press [Key 1] to save and return to the menu.
- ④ "Calibrate" means to enter the calibration state. After selecting, please place the device on a horizontal plane surface, and press [Key 1] to perform automatic calibration. After calibration, the device will automatically return to the home screen.

8. Scene

There are three built-in scene modes, "City", "Forest" and "Rain". Users can choose any of the available scenes to achieve the best image display effect.

- ① Rotate the [knob] counterclockwise to move the cursor to the scene option, press [Key 1] to enter the sub-menu.
- ② Rotate the [knob] to move the cursor to select "City", "Forest" or "Rain" mode. Press [Key1] to save and return to the previous page.

9. Picture in Picture

The top center of the display can show a 2x magnified picture to improve aiming visibility, allowing you to see magnified target details without losing the field of view.

- ① Rotate the [knob] counterclockwise to move the cursor to the PIP setting option, and press [Key 1] to enter the sub-menu.
- ② Rotate the [knob] to move the cursor to select "PIP OFF" or "PIP ON".
- ③ Press [Key 1] to save and return to the previous page.

10. Hot Track

The device can detect and display the highest temperature point on the screen, and automatically track this target heat source.

- ① Rotate the [knob] counterclockwise to move the cursor to the hot track setting option, and press [Key 1] to enter the sub-menu.
- ② Rotate the [knob] to move the cursor to select "Off" or "On". Press [Key 1] to save and return to the previous page.

11. Self-activated Recording

When the device detects recoil, the whole shooting process will be recorded in 20 second intervals. The incremental 20-second video footage will be saved on the TF Card.

- ① Rotate the [knob] counterclockwise to move the cursor to the self-activated recording setting, and press [Key 1] to enter the sub-menu.
- ② Rotate the [knob] to select "OFF", "ON" and "Impact Sensitivity" options.
- ③ After selecting "Off" or "On", press [Key 1] to save and return to the previous page.
- ④ After selecting "Impact Sensitivity", press [Key 1] to enter the sub-option menu of sensitivity level. Rotate the [knob] to select "Off", "Low", "Medium" or "High" mode. Press [Key 1] to save and return to the previous page.

12. Auto Power Off

After selecting your preferred time duration, the device will sense the last point of operation before beginning the shutdown. Auto power off will start after the device has been idle then it automatically triggers the auto power off command.

- ① Rotate the [knob] counterclockwise to move the cursor to select the auto power off setting, and press [Key 1] to enter the sub-menu.
- ② Rotate the [knob] to select "Off", "One minute", "Ten minutes" or "Thirty minutes" duration options. After selection, press [Key 1] to confirm and save, and return to the previous page.

13. Auto Recording

After auto recording is on, device will start recording and continue to record after the next startup.

- ① Rotate the [knob] counterclockwise to move the cursor to the auto recording setting option and press [Key 1] to enter the sub-menu.
- ② Rotate the [knob] to select "Off" or "On" options, press [Key 1] to save and return to the previous page.

14. Loop Recording

Users can customize the segment recording duration. This can be set up under loop recording. When the capacity of the memory card is full, the new recording will automatically overwrite the previous saved files. When you select "Off", the recording will stop when the memory card is full, and the oldest video file will not be overwritten.

- ① Rotate the [knob] counterclockwise to move the cursor to the loop recording setting option, and press [Key 1] to enter the sub-menu.
- ② Rotate the [knob] to move the cursor to select preferred loop time duration "Off", "Three minutes", "Five minutes" or "Ten minutes". Press [Key 1] to save and return to the previous page.

15. Date Stamp

Users can set whether to display the time stamp in the lower right corner of photos and videos taken.

- ① Rotate the [knob] counterclockwise to move the cursor to the date stamp setting option, and press [Key 1] to enter the sub-menu.
- ② Rotate the [knob] to move the cursor to select "Off" or "On" options. After selection, press [Key 1] to save and return to the previous page.

16. Record Audio

User can set whether to record audio synchronously in the video.

- ① Rotate the [knob] counterclockwise to move the cursor to the recording audio setting option, press [Key 1] to enter the sub-menu.
- ② Rotate the [knob] to move the cursor to select "Off" or "On" option, after selection, press [Key 1] to save and return to the previous page.

17. WiFi

Through the WiFi connection, you can use your phone, PC or tablet as an external viewfinder enabling users to synchronously see the photos and videos on a larger screen.

- ① Rotate the [knob] counterclockwise to move the cursor to the WiFi setting option, and press [Key 1] to enter the sub-menu.
- ② Rotate the [knob] to move the cursor to select "On" or "Off" option. Select "Off", and return to the previous page. Select "On" to enable WiFi and return to the home screen.

Steps to connect to your mobile device:

- ① Download "PardVision" from the Apple App Store or the Google Play Store.
- ② Turn on the WiFi on your device and on your mobile device.
- ③ Search the WiFi on your mobile device (the device WiFi network is a string of characters starting with PARD, which is a unique string of numbers). Please enter the password: 12345678 to connect.
- ④ Enter the application to operate and use.

Note: After the WiFi is turned on, you cannot access the menu. Press and hold [Key 4] to disable the WiFi and then enter the menu interface.

18. Language

Users can choose their preferred language.

- ① Rotate the [knob] counterclockwise to move the cursor to the language setting option, press [OK] to enter the sub-menu.
- ② Rotate the [knob] to move the cursor to select the desired language. Press [Key 1] to switch the system language and return to the previous page.

19. Date/Time

Users can set the system date and time of the device.

- ① Rotate the [knob] counterclockwise to move the cursor to the date/time setting option, press [Key 1] to enter the sub-menu.
- ② Rotate the [knob] to adjust the setting date and time value, press [Key 1] to switch options, press [Key 4] to save and return to the previous page.

20. Format

If users want to reformat the TF Card, it will delete all the data on the TF card permanently. Data cannot be recovered after reformatting. **Please operate with caution!**

- ① Rotate the [knob] counterclockwise to move the cursor to the format setting option, and press [Key 1] to enter the sub-menu.
- ② Rotate the [knob] to move the cursor to select "Cancel" or "OK" option. After selection, press [Key 1] to confirm the relevant operation and return to the previous page.

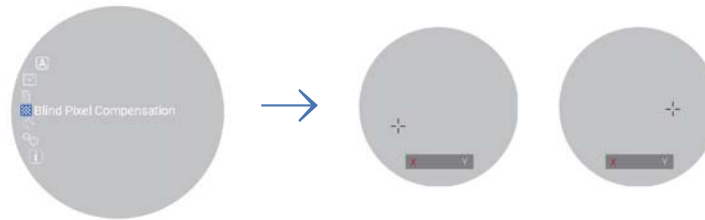
21. Blind Pixel Compensation

The blind pixel compensation algorithm enables automatic compensation for blind spots that no longer respond to light and also reduces image distortion, as shown in Picture 16 and Picture 17.

TS31

- Long press [Knob] to enter into menu interface .
- Rotate the [knob] counterclockwise to move the cursor to the blind pixel compensation option, press [Knob] to enter. You will see an important reminder:

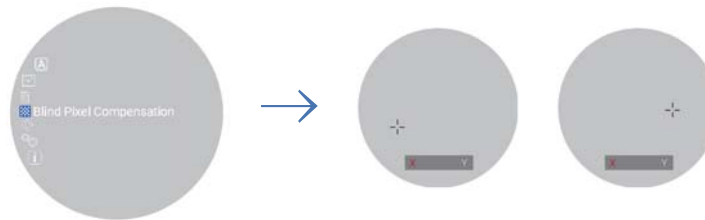
- ① Please put on lens cap
 - Long press the MENU button to enter the blind spot elimination function;
 - Short press the MENU key to switch X / Y, rotate the [Knob] to move the cursor ;
 - ② Short press "OK" key to confirm the elimination;
 - Long press the MENU button to exit the function;
- Press and hold [Knob] to start the blind pixel compensation, press [Knob] to switch between "X" and "Y", locating the blind spot by "X"/"Y", press [Key 2]/[Key 3] to move "X"/"Y" cursor position to confirm the elimination of blind pixel, and press and hold [Knob] to exit ;



Picture 16

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- ① Rotate the [knob] counterclockwise to move the cursor to the blind pixel compensation option, press [Key 1] to enter. You will see an important reminder: Please close the lens cap before performing blind pixel compensation process!
- ② Press [Key 4] to exit. Press and hold [Key 1] to start the blind pixel compensation. After the process is completed, you can rotate the [knob] to move the cursor to backup: "Yes" or "NO".



Picture 17

22. Default Settings

If users decide to reset the device, it will restore the device to the factory default settings and all of the user data and personalized settings will be deleted. **Please operate with caution!**

- ① Rotate the [knob] counterclockwise to move the cursor to restore default setting option, press [Key 1] to enter the sub-menu.
- ② Rotate the [knob] to move the cursor to select "Cancel" or "OK" option. After selection, press [Key 1] to confirm the relevant operation and return to the previous page.

23. Firmware Upgrade

System firmware can be updated to maintain an optimized current version.

- ① Rotate the [knob] counterclockwise to move the cursor to the firmware upgrade option, and press [Key 1] to enter the sub-menu. You will see an important reminder: Upgrading firmware may cause damage to the equipment, please operate with caution!
- ② Press and hold [Key 1] to confirm and press [Key 4] to exit and return to the previous page.

Note: When performing this operation, please load the device with a fully charged battery and type-C power supply. Powering off the device during the firmware update process may cause damage to the device components. Please operate with caution.

24. Version

This function displays the device's version.

- ① Knob the [knob] counterclockwise to move the cursor to the version option, press [Key 1] to enter the sub-menu to view.
- ② Press [Key 1] again to exit and return to the previous page.

Statement : //

FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Note: The Grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. such modifications could void the user's authority to operate the equipment. The device has been evaluated to meet general RF exposure requirement. This equipment complies with FCC's RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna(s) must not be co-located or conjunction with any other antenna or transmitter.

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