DNT OPTICS

Day Night Technologies

CONTENTS

DNT OPTICS

⌐ Day Night Technologies ⌐

ZULUS 4K
Digital Day Night Scope

DNTOPTICS

■ DESCRIPTION

The ZULUS 4K Tube-Style Digital Day & Night Vision Scope (ZULUS 4K) is a versatile device designed for 24/7 operation in all weather conditions. With exceptional image quality day and night, it delivers an immersive visual experience that elevates your hunting and shooting performance. The integrated laser rangefinder, combined with a ballistic calculator, ensures accurate shot placement.

■ PACKAGE CONTENTS

- ZULUS 4K
- Eye Cup
- Mount Accessories
- Torx Plus IP20 Wrench
- USB-C Cable
- Objective Sunshade
- User Manual
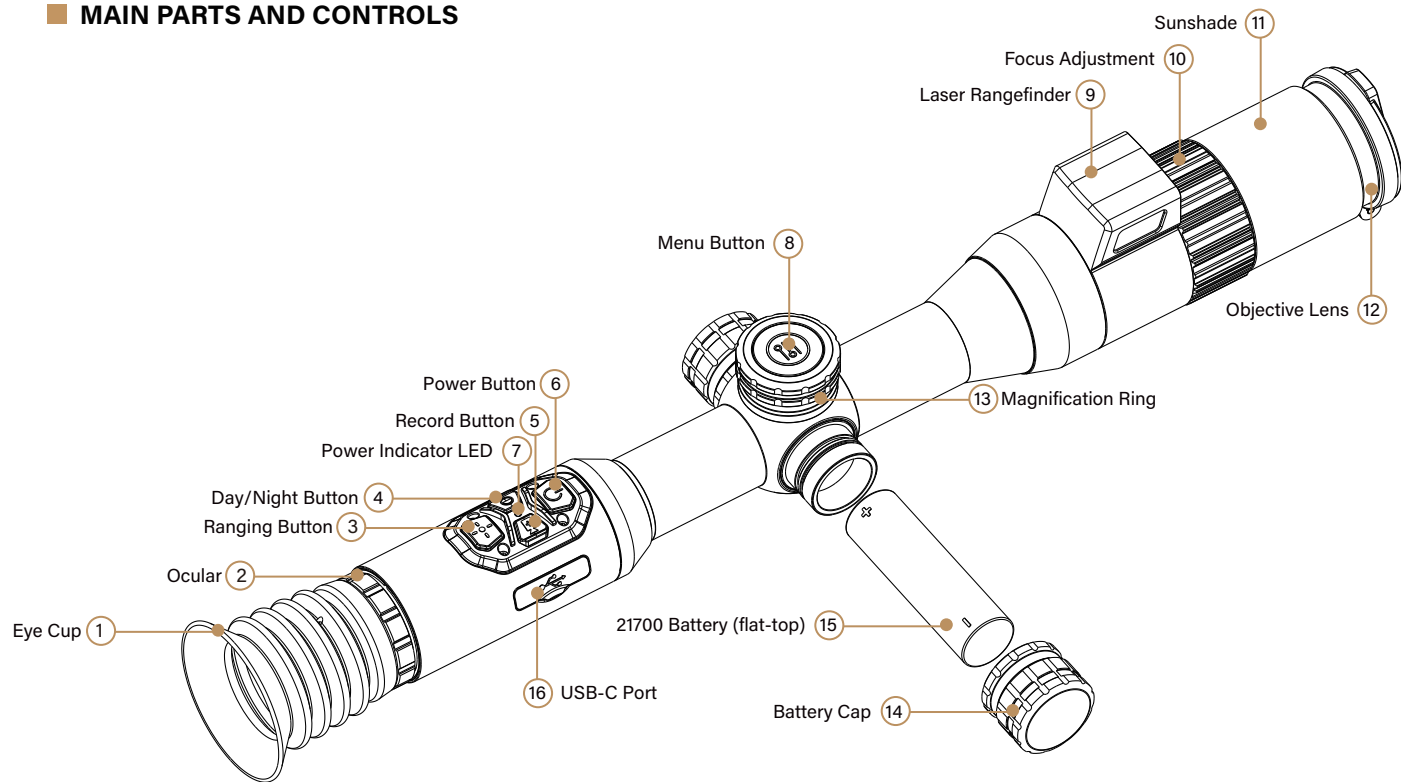- Screw × 2
- 21700 Battery (flat-top)

SPECIFICATIONS

ZULUS 4K			
Sensor Specifications	Resolution	3840×2160 pixels	
	Frame Rate	60 fps	
	Video Record Resolution	1920×1080 pixels	
Optical Specifications	Base Magnification	3x	
	Digital Magnification	4K: 3x, 4.5x, 6x, 7.5x, 9x, 10.5x, 12x, 13.5x, 15x, 16.5x ,18x, 19.5x, 21x, 22.5x ,24x FHD: 3x, 4.5x, 6x, 7.5x, 9x, 10.5x, 12x	
	Eye Relief	65 mm / 2.6 inches	
	Diopter Adjustment	±3 D	
Display Specifications	Type	Micro-OLED	
	Display Resolution	1920×1080 pixels	
	Refresh Rate	60 Hz	
Power Specifications	Battery Type	21700 Battery (flat top)	
	Operating Time	6 h	
	External Power Supply	5V Type-C USB	
Physical Specifications	Net Weight	690 g / 24.3 oz	
	Dimensions	347×83×65.3 mm / 11.4×2.7×2.1 inches	
	Memory	Built-in Memory, 64GB	
	Waterproof	IP67	
	Wi-Fi / App	YES (DNT)	
	Operation Distance	5–1200 m / 5–1300 yards	
	Operating Temperature	-20~50 ℃ / -4~122 ℉	
	Recoil Rating	.50 BMG	

■ FEATURES

- 4K Sony STARVIS 2 Sensor at 3840×2160 resolution

- Ultra HD image quality, Micro-OLED display of 1920×1080 resolution at 60 Hz

- The 4K-30FPS mode supports 3x to 24x zoom, with lossless digital zoom available from 3x to 6x; the 1080P-60FPS mode supports 3x to 12x zoom.

- 1300Y laser rangefinder and built-in ballistic calculator with 3-axis gyroscopic detection

- Picture-in-picture (PIP) aiming window

- Full-color images in low-light conditions

- One-shot zeroing

- 5G Wi-Fi for high-speed data transmission

- 64GB internal memory

MAIN PARTS AND CONTROLS

Sunshade 11

Focus Adjustment 10

Laser Rangefinder 9

Objective Lens 12

Menu Button 8

Power Button 6

Record Button 5

Power Indicator LED 7

Day/Night Button 4

Ranging Button 3

13 Magnification Ring

Ocular 2

Eye Cup 1

21700 Battery (flat-top) 15

16 USB-C Port

Battery Cap 14

■ POWER SUPPLY

This device is powered by a rechargeable 21700 battery (flat top) or via USB power. If using USB power, please remove the 21700 battery. To charge the battery, use an external USB battery charger. The USB-C port cannot be used to charge the 21700 battery.

Note: Removing the side cover will void the device's IP67 waterproof rating.
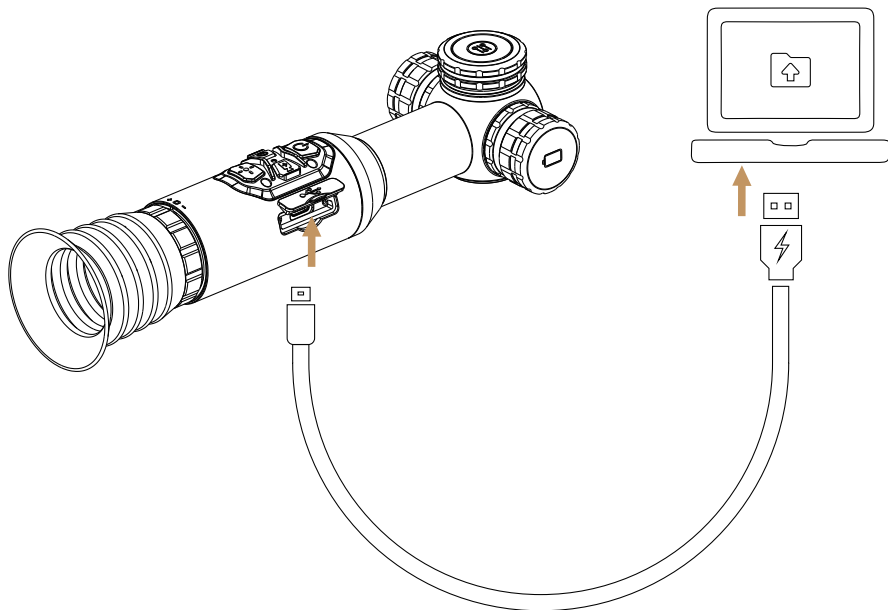
Installing the 21700 Battery (flat top)

21700 Battery (flat-top) ⑮

⑭ Battery Cap

＋   －
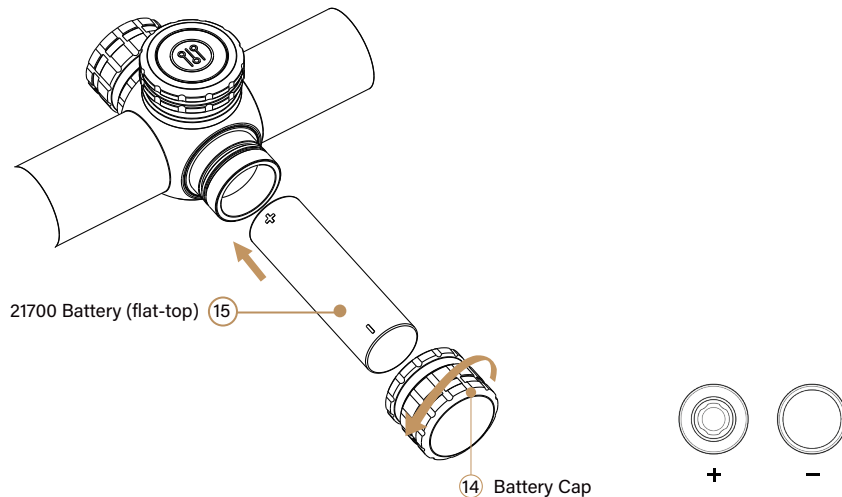
● Twist the Battery Cap counterclockwise to remove it.

● Insert the 21700 battery into the battery compartment, with the positive (+) end going in first.

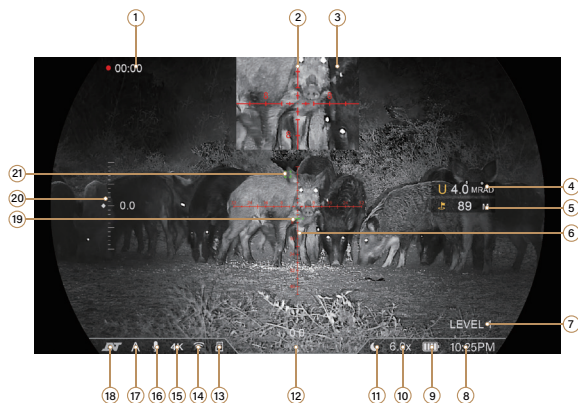● Twist the Battery Cap clockwise until fully tightened.

USB-C DATA TRANSFER

● Turn on ZULUS 4K.

● Unplug the USB port silicone cover.

● Plug the USB-C cable into the USB-C port. ZULUS 4K will connect to your computer like a USB drive. You can browse and download video recordings to your computer, as well as transfer files from ZULUS to your computer.

◼ ON-SCREEN DISPLAY

① Recording Indicator (It only shows when the device is recording)

② PIP Reticle

③ PIP Window

④ Ballistic Solution

⑤ Ranging Distance

⑥ Reticle

⑦ Current Screen Brightness Level

⑧ Current Time

⑨ Battery Level

Icon	Status	Battery Status
	Low Battery	0% ~ 10%
	1 bar	10% ~ 20%
	2 bars	20% ~ 50%
	3 bars	50% ~ 80%
	4 bars	80% ~ 100%
	USB Powered	Connected to Type-C

⑩ Current Magnification

⑪ Current Icon Indicates Black & White Mode ☾ (Color Mode ☀)

⑫ Gyroscope Horizontal Level

⑬ Built-In Memory (It only shows when memory error occurs)

⑭ Wi-Fi (It only shows when Wi-Fi is on)

⑮ Current Icon Indicates 4K Mode **4K** (1080P Mode **FHD**)

⑯ Mic (It only shows when Recording Audio is on)

⑰ Ballistic Profiles Info

⑱ DNT Logo

⑲ Holdover Point of Impact

⑳ Gyroscope Vertical Level

㉑ Ranging Reticle

CONTROL DESCRIPTION

8 Menu Button
13 Magnification Ring
6 Power Button
Day/Night Button 4
5 Record Button
3 Ranging Button

Rotary Control	Status	Rotation
13	On	Zoom In / Out
	Menu	Move Cursor Up / Down
	Reticle Zeroing	Move Cursor Up / Down
	Date Setting	Adjust the Value
	Time Setting	Adjust the Value

Button	Status	Short Press	Long Press
8	On	PIP On / Off	Open Settings
	Menu	Confirm	Back
	Reticle Zeroing	Confirm	——
	Date Setting	Confirm	Back
	Time Setting	Confirm	Back
6	Off	——	On
	On	Standby	Off
	Standby	Wake-Up	——
	Reticle Zeroing	Freeze / Unfreeze	——
4	Color Mode	Adjust Brightness	Switch To Black & White Mode
	Black & White Mode	Adjust Brightness	Switch To Color Mode
5	On	Start / End Recording	Start RAV Recording (Manual Mode)
3	Ballistic Calculation Off	Show / Hide Ranging Icon And Distance	Turn Off Ranging
	Ballistic Calculation On	Perform Ranging And Ballistic Calculation	Turn Off Ranging

◼ QUICK START GUIDE

Turning On/Off the Device

To turn on the device, long press the **Power Button** ⑥ ⏻ for 2 seconds. The Power Indicator LED will turn blue, and the DNT logo will appear on the screen.

To turn off the device, long press the **Power Button** ⑥ ⏻ . A 2-second countdown will appear on the screen. Keep holding the **Power Button** ⑥ ⏻ until the device powers off. The Power Indicator LED will also turn off.

Enabling Standby Mode

To enable Standby Mode, short press the **Power Button** ⑥ ⏻ . The screen will turn black and the Power Indicator LED will turn orange. To exit Standby Mode, short press the **Power Button** ⑥ ⏻ again.

Ocular Adjustment

This adjustment helps achieve the best screen clarity for your eye and is independent of the target (therefore, you can set it even with the objective lens cap closed). You can use the eye cup as a reference point for proper eye relief. Slowly rotate the **Ocular** ② clockwise or counterclockwise until you achieve the best screen clarity. Once set, no further adjustment is needed.

Focus Adjustment

This adjustment controls image focus. Depending on your distance from the target, rotate the **Focus Adjustment** ⑩ clockwise or counterclockwise to achieve maximum clarity. You may need to adjust this frequently to keep the target in focus.

Focus Adjustment ⑩

Power Button ⑥

Ocular ②
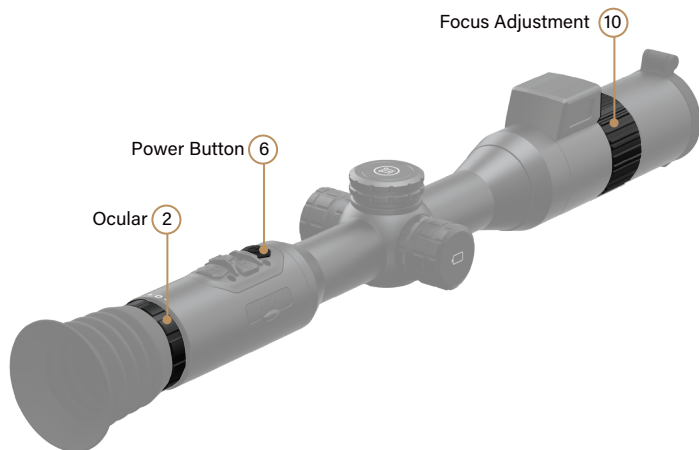
■ QUICK START GUIDE

Zooming In/Out

Rotate the **Magnification Ring** (13) clockwise to zoom in.
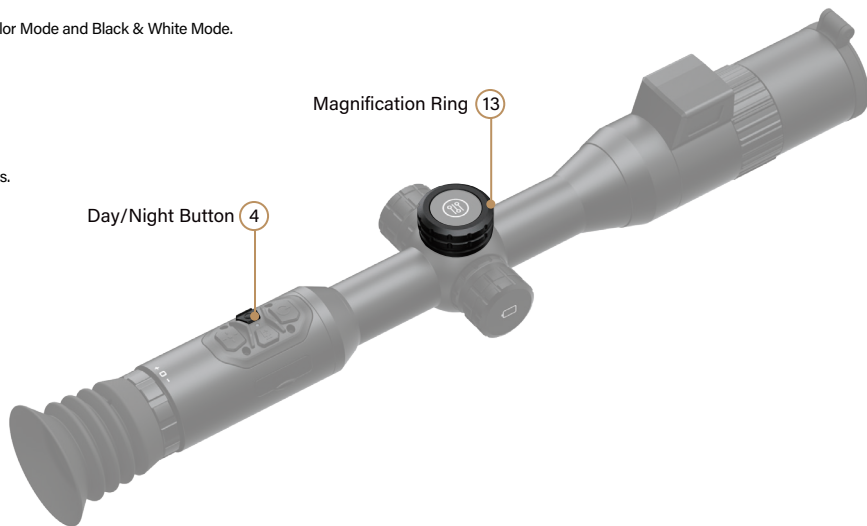
Rotate the **Magnification Ring** (13) counterclockwise to zoom out.

Switching Between Color Mode and Black & White Mode

Long press the **Day/Night Button** (4) ◑ for 2 seconds to toggle between Color Mode and Black & White Mode.

Magnification Ring (13)

Adjusting Screen Brightness

Press the **Day/Night Button** (4) ◑ to cycle through 5 screen brightness levels.

Day/Night Button (4)

◼ QUICK START GUIDE

Recording

Loop Recording

Short press the **Record Button** ⑤ 📹 to start loop recording, with each video lasting up to 10 minutes. To stop the recording at any time, short press the button again.

To adjust loop recording time, long press the **Menu Button** ⑧ ☰ to enter Function Settings, select "Loop Recording" and choose from off (default 10 minutes), 1 minute, 3 minutes, or 5 minutes.

RAV Auto Mode

To activate RAV Auto Mode, long press the **Menu Button** ⑧ ☰ to enter Settings, and select "Recoil Activated Video" > "Auto Mode".

In Auto Mode, the device will record 10 seconds before and after the shot.

RAV Manual Mode

To activate RAV Manual Mode, long press the **Menu Button** ⑧ ☰ to enter Settings, and select "Recoil Activated Video" > "Manual Mode".

In Manual Mode, the device will record 10 seconds before and after the **Record Button** ⑤ 📹 is long pressed.

RAV Duration Extension

To extend the recording, long press the **Record Button** ⑤ 📹 again while the current recording is still in progress. Each long press adds 10 seconds to the recording, with a maximum total duration of 2 minutes.

RAV Off

To deactivate RAV, long press the **Menu Button** ⑧ ☰ to enter Settings, and select "Recoil Activated Video" > "Off".
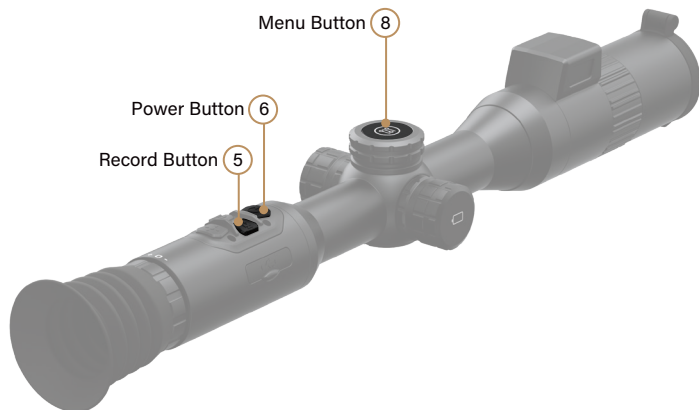
Menu Button ⑧

Power Button ⑥

Record Button ⑤

■ MENU LIST

Long press the **Menu Button** ⑧ ⌘ to enter Settings. There are currently 11 different sections in total. Once you are in the Settings menu, rotate the **Magnification Ring** ⑬ clockwise or counterclockwise to navigate up or down. Short press the **Menu Button** ⑧ ⌘ to select an option, and long press it to go back.

(Main screen)

Long press for 2s

(Menu)

■ MENU LIST

Long press the **Menu Button** (8) (⊟) to enter Settings. There are currently 11 different sections in total. Once you are in the Settings menu, rotate the **Magnification Ring** (13) clockwise or counterclockwise to navigate up or down. Short press the **Menu Button** (8) (⊟) to select an option, and long press it to go back.

Icon	Description
⊕	【Connections】 Wi-Fi
⊙	【Zeroing】 Zeroing
┼	【Reticle Settings】 Reticles: 1-FFP / 2-FFP / 3-SFP / 4-SFP / 5-SFP / 6-SFP / 7-SFP / 8-SFP / 9-SFP / Hide Reticle Colors: Red / Green / Yellow / Black / White
◢	【Ballistic Calculator】 Turn ON / OFF Ballistic Calculation Ballistic Data Settings Aiming Method: Holdover / Dial In Display Ballistics: MRAD / MOA / cm / inches / Off
▣	【PIP Settings】 Off / Left / Center / Right
4K	【4K/1080P】 4K-30FPS/1080P-60FPS
Auto	【Recoil Activated Video】 Auto Mode / Manual Mode / Off
⊡	【LRF Settings】 Ranging Modes: Continuous Ranging, Single Pulse Ranging, Timed Ranging 3s / 5s / 10s Ranging Units: Meter / Yard

◼ MENU LIST

Long press the **Menu Button** ⑧ 🎛 to enter Settings. There are currently 11 different sections in total. Once you are in the Settings menu, rotate the **Magnification Ring** ⑬ clockwise or counterclockwise to navigate up or down. Short press the **Menu Button** ⑧ 🎛 to select an option, and long press it to go back.

Icon	Description
🎨	【Image Settings】 Select between Natural Mode and Enhanced Color Mode
▦	【Function Settings】 Auto Power Off: Off / 10 / 20 / 30 minutes (Countdown will only start in Standby mode) Loop Recording: Off / 1 / 3 / 5 minutes Audio Recording: ON / OFF Gyroscope: ON / OFF / Calibration Screen Brightness: 1/2/3/4/5
⚙	【System Settings】 Date / Time Language Setting: English / Français / Español / Deutsch / Italiano Format Restore Default Settings Available Storage Version

■ MAIN FUNCTIONS

Reticle Zeroing

- Long press the **Menu Button** ⑧ 🔳 for 2 seconds to open Settings. Rotate the **Magnification Ring** ⑬ to "Zeroing" , and short press the **Menu Button** ⑧ 🔳 to select.
- Short press the **Power Button** ⑥ ⏻ to freeze/unfreeze the current image, or rotate the **Magnification Ring** ⑬ to set "Freeze" to "On" . Short press the **Menu Button** ⑧ 🔳 to confirm freeze/unfreeze the current image.
- Rotate the **Magnification Ring** ⑬ to move the cursor up or down.
- When the cursor is on "X" or "Y", rotating the **Magnification Ring** ⑬ clockwise increases the coordinate value on that axis; counterclockwise decreases it.
- Select "Save" and short press the **Menu Button** ⑧ 🔳 to confirm, save, and exit.
- Select "Exit" and short press the **Menu Button** ⑧ 🔳 to confirm and exit without saving

① Zeroing Profiles 10: current zeroing profile info (total: 1-10)

② Freeze: freeze / unfreeze image

③ Zoom=6.0x: magnification setting

④ X=0: the horizontal position of the reticle (left and right)

⑤ Y=0: the vertical position of the reticle (up and down)

⑥ Save: save and exit

⑦ Exit: exit without saving

⑧ 6.0x: current magnification level

Reticle Zeroing Example

Steps:

1. Place the target 100 yards away. Adjust the focus to ensure that the objective lens presents a sharp image of the target.
2. On the target, choose a central aiming point and observe the point of impact.
3. Return the reticle to the original aiming point, hold steady on this aiming point, and then short press the **Power Button** ⑥⏻ to freeze the sight picture.
4. Adjust the "X" and "Y" values to align the reticle with the point of impact.
5. Select "Save", then short press the **Menu Button** ⑧ to confirm, save the settings, and exit.

Note: Once the reticle has been changed (either moved), the magnification cannot be adjusted.
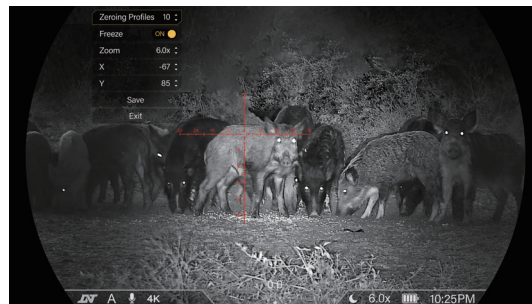
Range Finding

Continuous Ranging

- Long press the **Menu Button** (8) ⊜ for 2 seconds to open Settings. Rotate the **Magnification Ring** (13) to move the cursor to "LRF settings", and then short press the **Menu Button** (8) ⊜ to select it. Move the cursor to "Ranging Mode", short press the **Menu Button** (8) ⊜ to confirm your selection, and select "Continuous Ranging".

- Long press the **Menu Button** (8) ⊜ twice until you reach the main shooting screen.

- Short press the **Ranging Button** (3) -•- to turn on the ranging function. The screen will display the ranging icon and target distance. As the target distance changes, the readings will update in real time.

- To turn off continuous ranging, long press the **Ranging Button** (3) -•- for 1.5 seconds.
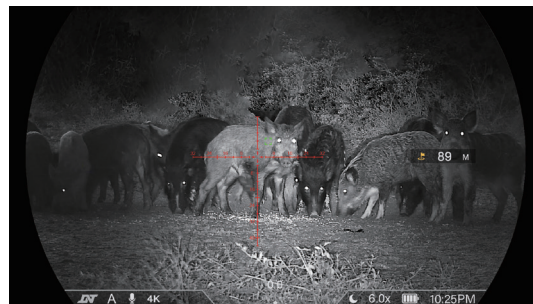
Range Finding

Single Pulse Ranging

- Long press the **Menu Button** (8) (icon) for 2 seconds to open Settings. Rotate the **Magnification Ring** (13) to move the cursor to "LRF Settings", and then short press the **Menu Button** (8) (icon) to select. Move the cursor to "Ranging Mode", short press the **Menu Button** (8) (icon) to confirm your selection, and select "Single Pulse Ranging".

- Long press the **Menu Button** (8) (icon) twice until you reach the main shooting screen.

- Short press the **Ranging Button** (3) -•- to turn on the ranging function. The screen will display the ranging icon and target distance. Press the **Ranging Button** (3) -•- again to take another measurement.

- To turn off single pulse ranging, long press the **Ranging Button** (3) -•- for 1.5 seconds. If inactive for 20 seconds, it will automatically turn off.

Timed Ranging

- Long press the **Menu Button** (8) (icon) for 2 seconds to open Settings. Rotate the **Magnification Ring** (13) to move the cursor to "LRF Settings", and then short press the **Menu Button** (8) (icon) to select. Move the cursor to "Ranging Mode", short press the **Menu Button** (8) (icon) to confirm your selection, and select "Timed Ranging" for 5, 10, or 15 seconds.

- Long press the **Menu Button** (8) (icon) twice until you reach the main shooting screen.

- Short press the **Ranging Button** (3) -•- to turn on the ranging function. The screen will display the ranging icon and target distance. The device will continue displaying target ranges for the selected duration.

- To turn off timed ranging, long press the **Ranging Button** (3) -•- for 1.5 seconds. Once the selected ranging time is up, ranging will stop automatically.

Built-In Ballistic Calculator

Long press the **Menu Button** (8)(≋) for 2 seconds to open Settings, navigate to the Ballistic Calculator, and toggle it "ON".

Ballistic Data Settings

After opening Ballistic Calculator in Settings, select "Ballistic Data Settings" to proceed to the following screens.
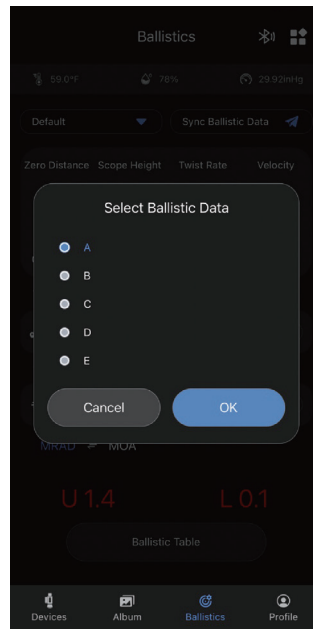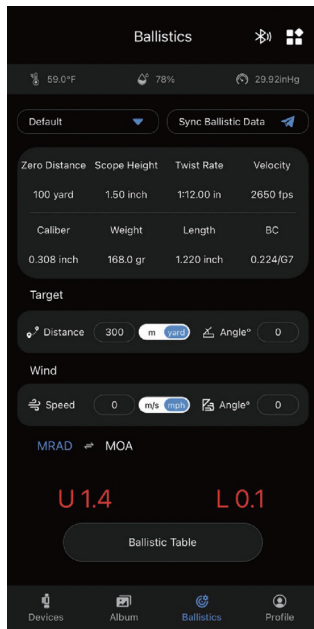
Ballistic Calculation—App Wi-Fi Connection

You can upload ballistic data from the DNT app to the device once they have been paired via WiFi.
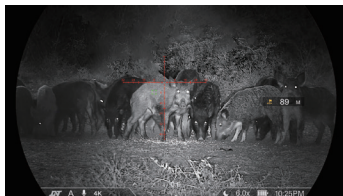
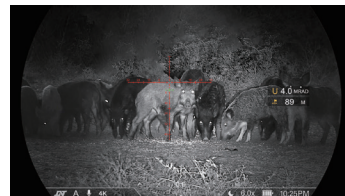Note: See page 26 for app installation and connection instructions.

Aiming Method - Holdover

Long press the **Menu Button** ⑧ 🔄 to enter Settings, and select "Ballistic Calculator" - "Aiming Method" - "Holdover".
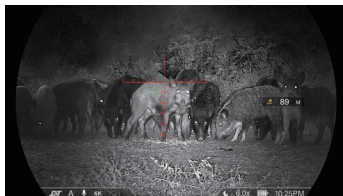
- ● Long press the **Menu Button** ⑧ 🔄 twice until you reach the main shooting screen.

- ● A short press of the **Ranging Button** ③ -·- will turn on the ranging function, displaying the ranging icon and measured distance.

- ● A second short press of the **Ranging Button** ③ -·- will display the ranging distance, ballistic solution, and point of impact.

- ● A third short press of the **Ranging Button** ③ -·- will hide the point of impact.

- ● Long press the **Ranging Button** ③ -·- for 1.5 seconds will turn off the ranging function. The ranging icon and measured distance will disappear.
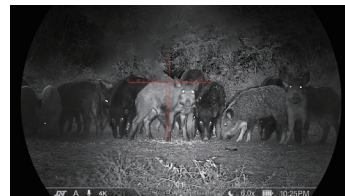

(First short press of the Ranging Button)

(Second short press of the Ranging Button)
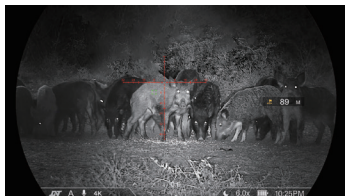

(Third short press of the Ranging Button)

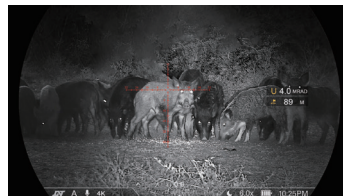(Long press the Ranging Button for 1.5 seconds)

Aiming Method - Dial In

Long press the **Menu Button** ⑧ 🔳 to enter Settings, and select "Ballistic Calculator" - "Aiming Method" - "Dial In".

● Long press the **Menu Button** ⑧ 🔳 twice until you reach the main shooting screen.

● A short press of the **Ranging Button** ③ ‑•‑ will turn on the ranging function, displaying the ranging icon and measured distance.

● A second short press of the **Ranging Button** ③ ‑•‑ will display the the ranging distance, ballistic solution, and re-zero the main reticle to the correct point of impact.

● A third short press of the **Ranging Button** ③ ‑•‑ will return the reticle to the shooter's initial zero.

● Long press the **Ranging Button** ③ ‑•‑ for 1.5 seconds will turn off the ranging function. The ranging icon and measured distance will disappear.
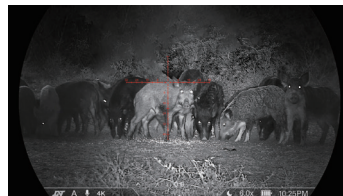

(First short press of the Ranging Button)

(Second short press of the Ranging Button)
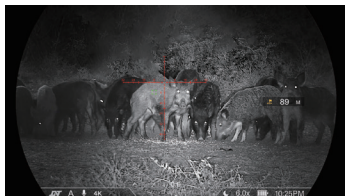
(Third short press of the Ranging Button)

(Long press the Ranging Button for 1.5 seconds)

Color Enhancement Function

Choose between natural color images and enhanced color images.

Natural Color Mode: Image with natural colors (similar to what the human eye sees)

Enhanced Color Mode: Image with enhanced colors

APP USER MENU

App Installation

Search for the **DNT OPTICS** app on **Google Play (Android)** or the **App Store (iOS)**, or scan the QR codes below to download and install it.


Android

iOS

App Connection

- Long press the **Menu Button** (8) (≡) for 2 seconds to open Settings. The first option is "Connection". Then, short press the **Menu Button** (8) (≡) three times to toggle Wi-Fi "On".

- This will display the Wi-Fi name and password of the device as shown in Figure (1).

- Go to your phone's "WLAN Settings", find and tap the device's Wi-Fi name. Enter the password "12345678", tap "Connect", and wait for the connection to be established.
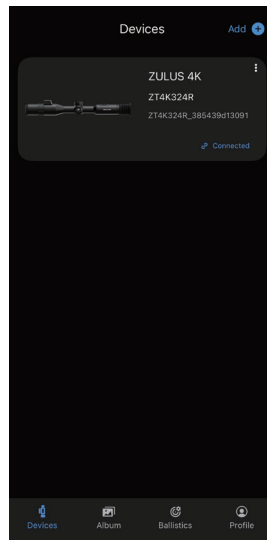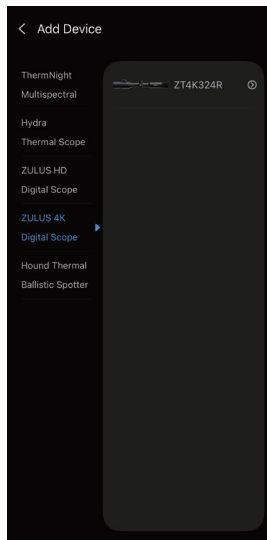

Figure (1)
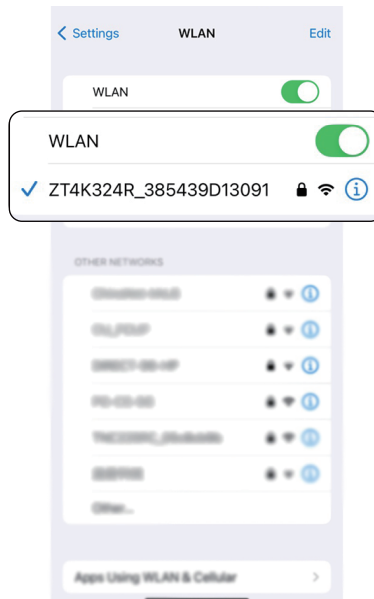
App Connection

- To add a device, open the DNT app and tap "Add Device". Select "ZULUS 4K Digital Scope", find ZT4K324R, and tap "Add".
- After successfully adding the device, it will be connected.

Firmware Updates

Use the "**Firmware Update**" feature in the app to perform OTA (over-the-air) updates wirelessly.

■ 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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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. To maintain compliance with FCC's RF Exposure guidelines, this equipment must be installed and operated with a minimum distance of 20cm between the radiator and your body. Use only the supplied antenna.

CE FC RoHS UK CA

www.dntoptics.com