User's Manual

NOCPIX

ACE 2 SERIES

Thermal Imaging Scope



Nocpix

W A R N I N G !
ITAR REQUIREMENTS
These products may be subject to export and foreign trade control laws of the United States and may not be exported without prior approval of the U.S. Department of State. Learn more at irayusa.com/ITAR.

⚠ CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

2601 State Hwy 121, Building 3, Suite 306, Lewisville, TX 75056
800.769.7125 info@irayusa.com

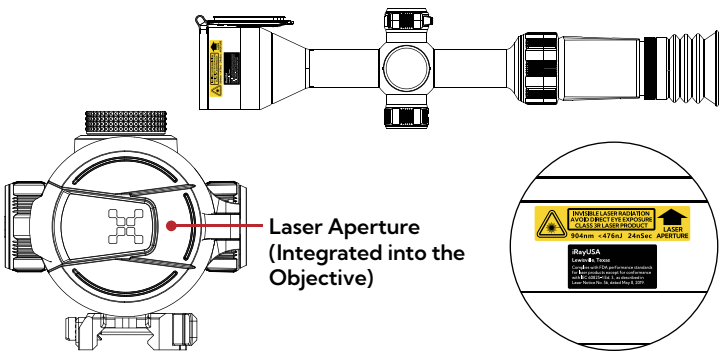
NOTICE: This product is a Class 3R laser product.

Explanatory Label



Mfr ID and Certification Label





NOTE: There is no scheduled maintenance or service necessary to keep this product in compliance and no user service or maintenance is required.

This Laser Product is designated as Class 3R during all procedures of operation.

Wavelength: 904 nm

Laser Power for Classification: <476 nJ

Emission Type: Pulsed, Invisible

Pulse Width: 24 nSec

INVISIBLE LASER RADIATION
AVOID DIRECT EYE EXPOSURE
CLASS 3R LASER PRODUCT

NOTES:

- There is no service required or allowed of this product by the end user.
- This product is to be serviced or repaired only by factory authorized technicians.
- This product is not to be opened or modified by the user.
- The user is not to modify the unit or remove protective covers or housing. Service is only to be handled by authorized factory trained technicians. This product has no user-serviceable parts.
- Do not point laser or allow laser light to be directed or reflected toward other people or reflective objects.
- Operators should be trained to not target the eyes of people, animals, and pets or aim at reflective objects, etc.
- There is a potential hazard of eye or skin exposure to laser radiation if the included instructions are not followed.
- This laser is never to be operated if the unit is defective or the cover or seal is damaged.
- Always operate the product with the aperture pointed downrange.

Table of Contents

1. Overview 2
2. Features 2
3. Accessories 4
4. Components and Controls 5
5. Description of Control Buttons and Shortcuts6
6. Quick Start Guide 8
7. Dual-Power Supply System 10
8. Operating Instructions 15
9. Zeroing the ACE 2 Series 20
10. Non-Uniformity Correction 21
11. Photography and Video Recording 22
12. Accessing the Internal Memory 24
13. Using the Nocpix App 24
14. Integrated Laser Rangefinder 25
15. Ocular, Digital, and Hybrid Zoom 27
16. Quick Menu Options and Descriptions 28
17. Main Menu Options and Descriptions 31
18. Basic Inspection 61
19. Basic Maintenance 61
20. Warranty 62
21. FCC Statement 63
22. Button Cell Battery Warnings 64
23. General Troubleshooting 65
25. Notes 66

WARNING: CHOKING HAZARD
Children under 3 years old can choke or suffocate on small parts of this product. This product is not a toy; keep out of reach of children.

1. Overview

The ACE 2 Series of thermal scopes combines unique features and a familiar form factor to give users the perfect night-hunting optic. With a lens-integrated laser rangefinder, the ACE 2 maintains a sleek aesthetic and improved long-range capabilities. Other features include an ocular 1-2× magnifier, 2560×2560 display, 30mm tube-style housing, 60hz refresh rate, Reality+ 2.0 image processing, and ≤12 mK NETD. When combined with an 18650 battery, the internal battery provides up to 7 hours of run-time so you can stay in the field longer. The integrated LRF paired with built-in ballistics software gives you more confidence to take shots at extended distances with ease, while the gallery function allows for instant replay of your recordings.

2. Features

- 12 µm high-performance thermal detector
- ≤12 mK sensitivity
- 1,300-yard integrated, high-precision laser rangefinder
- 2.0 ocular zoom and digital zoom
- Magnesium alloy housing
- 1.03" large-format display
- Dual-power supply solution for extended operation
- Maximum detection range: 3400 yards
- 2560×2560 AMOLED display
- High frame frequency: 60Hz
- Recoil-activated video
- User-defined, multi-variable ballistics calculator
- Multiple zero profiles and ranges
- Traditional 30 mm diameter housing design
- Built-in 64 GB storage to support image capture and video recording
- Built-in Wi-Fi module
- Mobile device App compatible
- Gallery function for photo/video playback
- Picture in Picture (PIP)
- User-friendly interface
- Ultra-clear mode for advanced image detail
- Warm and cool image-hue options
- Pixel calibration function

Tech Specs

ACE 2	H35R	H50R	S60R
Sensor			
Resolution	640×512		1280×1024
Pixel Size	12 µm		
Frame Rate	60hz		30hz / 60hz
Sensor Sensitivity	≤12 mK		
Image Processing	Reality+ 2.0		
Core	Nocpix 640		Nocpix 1280
Optics			
Objective Lens	35 mm f/0.9	50 mm f/0.9	60 mm f/1.0
Base Magnification	2×	3×	2×
Zoom (Ocular / Digital)	2× / 5×	2× / 4×	2× / 7×
Field of View	12.6° × 10.1°	8.8° × 7.0°	14.7° × 11.7°
Detection Range	1970 Yards	2850 Yards	3400 Yards
Display Type	1.03-inch Large-format AMOLED		
Display Resolution	2560×2560		
Color Palettes	White Hot, Black Hot, Red Hot, Color, Violet, Crimson, Viridian		
Reticle Colors	8 (7 Static, 1 DIY)		
Reticle Types	Black Red, Black Green, White Red, White Green, Black White, White Black, Red, Green, Yellow		
Mounting System	Nocpix 30mm Quick Detach Mount		
P.I.P.	Yes		
Rangefinder	Integrated 1,300 yd LRF		
Eye Relief	60 mm		
Diopter Range	-5 to +4		
Electronics			
Onboard Recording	Video, Recoil-Activated Video, and Image		
Onboard Storage	64 GB		
Wireless Connectivity	Image and Video via App.		
Data/Power Connector	USB-C		
Power Supply	USB-C External, Built-In Battery Pack 18650 Batteries		
Max. Operating Time	8 Hours		7 Hours
Start Up Time	<6 Seconds, Instant from Standby		
Physical			
Size	14.45" × 2.56" × 3.62"	15.08" × 2.76" × 3.62"	15.63" × 2.87" × 3.62"
Weight	30.0 Oz	32.5 Oz	34.6 Oz
Environmental/Warranty			
Warranty	5 Years		
Housing Material	Magnesium Alloy		
Ingress Protection	IP67		
Operation Temperature	-4°F~122°F		
Max. Recoil	1000 g/s² (300 Win./7mm Mag)		

3. Accessories

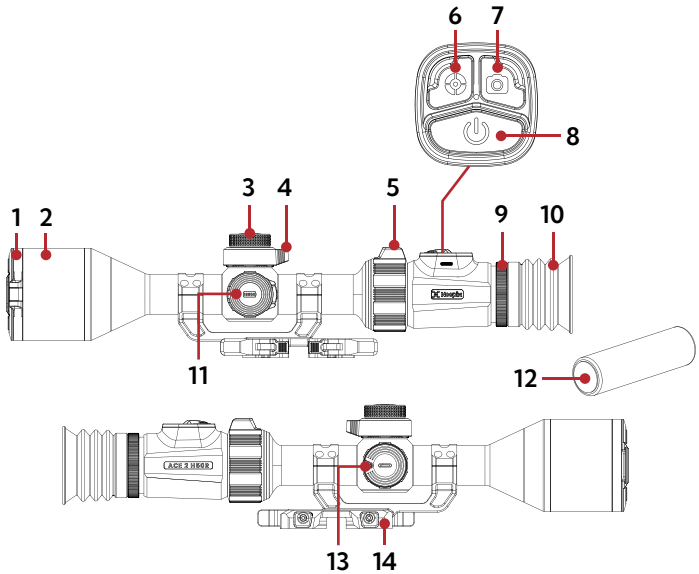
The ACE 2 Series thermal imaging rangefinder ships with everything you need to get out and hunt.

- Objective Lens Cap
- Standard Rubber Eyeguard
- Nocpix 30mm Quick Detach Mount
- 18650 Batteries
- Battery Charger
- USB-C Cable for Data/Video
- Focus Knob Rubber Cover
- Soft Case
- Lens Cloth
- User Manual



Various replacement accessories are available for purchase. Contact us at 800-769-7125 or irayusa.com/support.

4. Components and Controls



1	Objective Lens Cap
2	Objective Lens with Integrated Laser Rangefinder
3	Menu Button / Tactile Control Turret
4	Objective Lens Focus Ring
5	Ocular Zoom Lever
6	Rangefinding Button
7	Photo Button
8	Power Button
9	Eyepiece / Diopter Adjustment Ring
10	Eyeguard
11	18650 Battery Compartment / Cover
12	18650 Battery
13	USB-C Port / Cover
14	Nocpix 30mm Quick Detach Mount

5. Description of Control Buttons and Shortcuts

Power Button		
Current Screen, Menu, or Device Status	**Short Press**	**Long Press**
Device off	——	Power on the device
Home screen	Manually perform a non-uniformity correction (NUC)	Power off the device / enter standby mode manually
Manual standby mode	Exit manual standby mode	Exit manual standby mode
Main menu	Return to the previous menu without saving changes	——
Reticle zeroing & pixel defect correction	Open prompt window to save changes or exit without saving	——

Menu Button		
Current Screen / Menu	**Short Press**	**Long Press**
Home screen	Enter the quick menu	Enter the main menu
Main menu	Change menu options; enter the submenu; or confirm submenu changes and return to previous	Save and return to the home screen
Quick menu	Toggle through the menu options	Exit the quick menu
Reticle zeroing & pixel defect correction	Switch between the axis of movement (X and Y)	Open prompt window to save changes or exit without saving
Quick menu	Toggle through the menu options	Exit the quick menu

Rangefinding Button		
Current Screen / Menu	**Short Press**	**Long Press**
Home screen	Take a single ranging measurement.	**Continuous LRF is ON:** Activate/deactivate continuous ranging.
		Continuous LRF is OFF: Long press, move LRF cursor to target, then release the button to take a single ranging measurement.
Continuous rangefinding mode	——	Deactivate continuous rangefinding

Photo Button		
Current Screen / Menu	**Short Press**	**Long Press**
Home screen	Take a photo	Start / stop recording video

Control Turret	
Current Screen / Menu	**Rotate**
Home screen	**PIP is OFF:** Rotate to adjust the digital zoom level of the observed image. **PIP is ON:** Rotate to adjust the digital zoom level for the PIP image.
Quick menu	Switch menu options; move menu cursor **Clockwise:** Move left / down **Counterclockwise:** Move right / up
Main menu	
Reticle zeroing & pixel defect correction	Move the reticle position: **Clockwise:** Move left / down **Counterclockwise:** Move right / up

Rangefinding Button + Photo Button		
Current Screen / Menu	**Short Press**	**Long Press**
Home screen	——	Activate / deactivate the reticle (long press both buttons for 7 seconds)

6. Quick Start Guide

Step 1: Prepare to Use the ACE 2 Series

1. Compare the box contents to the accessories list and examine each for any shipping damage. See **Accessories** on page 4.
2. Check the lens to ensure there are no smudges or dirt present. Clean with the included lens cloth, if necessary.
3. Charge the batteries before using the ACE 2 Series for the first time. See **Charging the Batteries** on page 11.
4. Ensure the scope is level in the mount and the rings are properly tightened to 20 inch-pounds (in-lb), as the **rings may be loose from the factory**.
5. Install the eyeguard **(10)**.

Step 2: Turn On the ACE 2 Series

1. Open the objective lens cap **(1)**.
2. Long press the **Power button** for 2 seconds to power on the ACE 2 Series.
3. Rotate the eyepiece diopter adjustment ring **(9)** until the interface icons are clear.

WARNING: Do not point the objective lens toward intense energy sources, such as the sun. This may render the electronic components inoperative. The warranty does not cover damage caused by improper operation.

Step 3: Adjust Settings in the Quick Menu

Short press the **Menu button** to enter the quick menu to adjust the following settings (see **Quick Menu Options and Descriptions** on page 28):

1. Set the color palette to white hot, black hot, red hot, color, violet, crimson, or viridian.
2. Select a screen brightness level, from 1 to 10.
3. Select an image sharpness level, from 1 to 10.
4. Select an image contrast level, from 1 to 10.
5. Turn Ultra-clear mode on or off.
6. Set the image hue to warm or cool.
7. Select a preset ballistic distance or add a custom distance.

Step 4: Adjust Device Settings

1. Long press the **Menu button** to enter the main menu (see **Main Menu Options and Descriptions** on page 31 for detailed instructions) to:
   a. Turn on recoil-activated video.
   b. Turn on the PIP window.
   c. Set the non-uniformity correction (NUC) mode to automatic, manual, or background.
   d. Turn on the microphone.
   e. Turn on the motion sensor.
   f. Set the date and time.
   g. Set the units of measure to yards or meters.
2. Adjust the digital and ocular zoom levels:
   a. **When PIP is off:** Rotate the **Control Turret** to adjust the digital zoom level
   b. **When PIP is on:** Rotate the **Control Turret** to adjust the digital zoom level for the PIP image.
   c. **When hybrid zoom is off:** Rotate the **Ocular Zoom Lever** to adjust the ocular magnification from 1× to 3×.
   d. **When hybrid zoom is on:** Rotate the **Ocular Zoom Lever** to adjust the ocular and digital zoom levels at the same time.
   e. The real time magnification appears in the status bar.

Step 4: Set Up and Zero the Reticle

The reticle may be inactive when the ACE 2 Series is powered on for the first time. To activate the reticle, press and hold the **Rangefinder** and **Photo buttons** at the same time for at least 7 seconds.

1. Choose a zeroing profile.
2. Customize the reticle (see the **Reticle & Zeroing menu** beginning on page 33).
   a. Select a reticle style from the 7 available. A custom reticle is also available for purchase in the Nocpix App.
   b. Set the reticle color to black red, black green, white red, white green, black white, white black, red, green, or yellow.
   c. Set the reticle brightness level, from 1 to 6.
3. Zero the rifle scope. See **Zeroing the ACE 2 Series** on page 20.
   a. Set a zero distance that matches the target distance.
   b. Zero the reticle.

7. Dual-Power Supply System

The ACE 2 Series has a dual-power supply system which works seamlessly to power the device. When an optional, auxiliary 18650 battery is used with the built-in rechargeable lithium-ion battery pack, the ACE 2 Series supports a run time of up to 8 hours. Please ensure the batteries are fully charged before the first use.

- When an 18650 battery is installed and both the internal and 18650 batteries have adequate charge, the ACE 2 Series will draw power from both batteries to maximize run time.
- If the power of either battery is low or the 18650 battery is removed, the ACE 2 Series will switch to single-draw power.
- When the ACE 2 Series is in use, the 18650 battery may be installed or replaced at any time. When removed, power switches to the internal battery pack.
- When the ACE 2 Series is connected to an external power supply, the device will begin drawing power from the external source and begin charging the internal battery.
- Operation is not interrupted during power switching.

NOTE: The built-in battery pack is not removable or replaceable.

Battery Status Indicators



The "IN" battery status indicator for the built-in battery pack appears in the lower-right corner of the screen. If an 18650 battery is installed, an "EX" battery status indicator appears in the bottom-left corner.

The number of bars and color indicate the current battery charge level. The battery charging ⚡ icon appears above the "IN" status indicator when the ACE 2 Series is connected to an external power source.

ICON	STATUS
5 Bars (Blue)	81% – 100%
4 Bars (Blue)	61% – 80%
3 Bars (Yellow)	41% – 60%
2 Bars (Yellow)	21% – 40%
1 Bar (Red)	<20%; charge the battery promptly.
Charging ⚡	External power is connected; built-in battery is charging

NOTE: Charge the battery promptly when its status indicator shows one bar (<20%) to avoid over-discharge and potential damage to the battery.

Using an External Power Supply

The ACE 2 Series supports the use of a 5V external power supply, such as a mobile power bank. To use an external power supply:

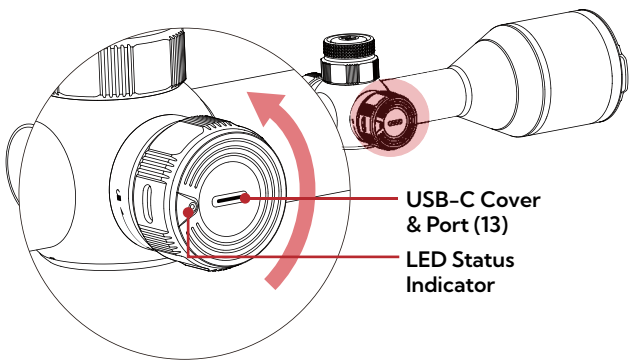
1. Connect the data cable **(15)** to the USB-C port **(13)** and the external power supply.
2. The ACE 2 Series will automatically switch to using the external power supply for power and begin charging the internal battery pack.
   a. A charging ⚡ icon appears above the "IN" battery status indicator in the lower-right corner of the screen, indicating that the built-in battery is charging.
   NOTE: The 18650 battery (if installed) cannot be charged by the external power supply.
3. When the external power supply is disconnected:
   a. If an 18650 battery is installed, the ACE 2 Series will begin drawing power from both the built-in and 18650 batteries.
   b. If no 18650 battery is installed or the battery level is low, the device will draw power from the built-in battery.

NOTE: Do not connect the ACE 2 Series to an external device with a power supply that exceeds the 3.0 USB cable.

Charging the Batteries

CHARGING THE BUILT-IN BATTERY PACK

1. Turn the USB-C cover **(13)** counterclockwise to remove it.
2. Connect the USB-C end of the data cable to the USB-C port **(13)**.



3. Connect the standard USB end of the data cable to:
   a. Any standard USB 3.0 port on a laptop or computer; **OR**
   b. A 5V–2A USB power adapter, and plug the power adapter into an electrical outlet.

4. While charging:
    a. The LED status indicator next to the USB-C port will turn red. When the indicator LED turns green, the battery is fully charged.
    b. A charging ⚡ icon appears above the battery status indicator in the lower-right corner of the screen.
    c. When fully charged, disconnect the data cable from the USB-C port and replace the USB-C port cover. Do not overcharge.

WARNING: Never charge the battery pack with a USB adapter that is greater than 5V–2A.

NOTES:

- The ACE 2 Series may be charged and operated at the same time.
- Only the built-in battery pack will be charged while connected via the USB-C port.
- When only one battery status bar remains, charge the battery right away to avoid over-discharge and a reduction in battery capacity or service life.

CHARGING THE 18650 BATTERIES

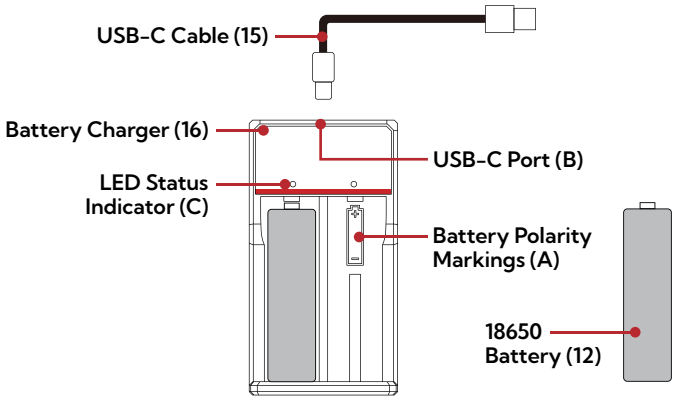
When not installed in the rifle scope, the battery can be charged directly:

1. Connect the included data cable **(15)** to the USB-C port on the side of the battery.
2. Connect the USB end of the data cable to:
    a. Any standard USB 3.0 port on a laptop or computer; **OR**
    b. An external power supply, such as a USB power bank; **OR**
    c. A 5V–2A USB power adapter, and plug the power adapter into an electrical outlet.
3. The indicator lights on the side of the battery indicate the battery charge level. When all four lights are lit, the battery is fully charged.
4. When fully charged, disconnect the USB-C cable.

To charge the battery using the included battery charger:

1. Insert an 18650 battery **(12)** into the battery charger **(16)** following the polarity markings **(A)** inside the battery slot.
2. Connect the USB-C cable **(15)** to the USB-C port **(B)** on the battery charger.
3. Connect the standard USB end of the data cable to:
    a. Any standard USB 3.0 port on a laptop or computer; **OR**
    b. A 5V–2A USB power adapter, and plug the power adapter into an electrical outlet.

4. During charging, the LED status indicator **(C)** on the battery charger will be solid red.



5. When the battery is fully charged, the LED status indicator will turn solid green. Remove the battery from the battery charger. Do not overcharge.

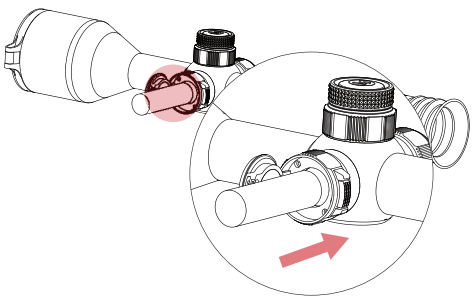
NOTE: When the LED status indicator flashes red, the battery charger is connected to a power source, but no battery is installed.

WARNING: Never use the battery charger with a USB power adapter that is greater than 5V–2A.

Installing an 18650 Battery

Install an optional 18650 battery to extend the operating time of the ACE 2 Series to up to 8 hours. Ensure the 18650 battery is fully charged before installing it.

1. Press the tab on the side of the battery compartment to open the hinged cap.
2. Insert an 18650 battery into the battery compartment. The compartment has dual polarity, which allows the 18650 battery to be installed in either direction.
3. Close the hinged cap.



WARNING: Only 18650 batteries may be used with the ACE 2 Series. Using any other battery type may cause irreparable damage to the rifle scope or cause a fire. Any damage from using an improper battery will not be covered by warranty.

WARNING: Only use the factory-supplied battery charger to charge the included 18650 batteries. The use of any other charger may irreparably damage the battery or the charger and may cause a fire. Any damage from using an improper battery charger will not be covered by warranty.

Battery Safety Warnings

WARNINGS:

- Do not use a power adapter or USB-C cable that has been modified or damaged.
- Do not expose the batteries to high temperatures or open flame, and do not immerse in water.
- Do not leave the batteries unattended while charging.
- Do not leave the batteries charging for long periods after full charge is reached. Charging time should not exceed 24 hours.
- Keep batteries out of the reach of children and pets.
- The batteries are equipped with short-circuit protection. However, any situation that may cause short-circuiting should be avoided.
- Do not disassemble, modify, hit, or drop the batteries.
- Do not connect the batteries to any external device with an electrical current that exceeds permitted levels.
- Do not connect an external device with a current supply that exceeds the 3.0 USB port.

To maintain optimal battery capacity and service life:

- Avoid storing a fully charged or discharged battery for long periods. Partial charging of the battery is necessary if the battery will be stored for an extended period.
- Do not charge an extremely cold battery. Allow the battery to warm up for about 45 minutes before charging.
- Charge the batteries at a temperature range from 32 °F to 113 °F; otherwise, the service life of the battery may be reduced.
- The recommended operating temperature range is -4 °F to 122 °F. Avoid using the batteries above the maximum or below the minimum recommended temperature range, as this may decrease the battery capacity or service life.

8. Operating Instructions

WARNING!
Don't point the objective lens towards intense energy sources, such as laser radiation or the sun. This may render the electronic components inoperative. The warranty does not cover damage caused by improper operation.

Using the Control Buttons

The ACE 2 Series is operated via four control buttons and a large tactile control turret. The large, easy-to-find control turret provides audible and tactile feedback when twisted. The control buttons and turret can be used to perform shortcut operations from the home screen, as well as in the menu and full-screen interfaces. See **Description of Control Buttons and Shortcuts** on page 6 for shortcut button details.

Powering On

1. Open the objective lens cap **(1)**.
2. Long press the **Power ⏻ button** for 2 seconds to turn on the ACE 2 Series. The Nocpix logo will appear.
3. The internal battery status indicator in the lower-right corner of the screen shows the current charge level.

Powering Off and Entering Standby

To power off the ACE 2 Series:

1. Press and hold the **Power ⏻ button**. The shutdown screen will open, showing a 3-second countdown.
2. Continue holding the **Power ⏻ button** until the countdown completes.
3. "Data saving..." appears on the screen, and the ACE 2 Series will shut down automatically after the data finishes saving.

NOTE: Releasing the **Power ⏻ button** at any time before the 3-second countdown reaches zero will stop the shutdown process, and the rifle scope will enter standby mode. In standby, short press the **Power ⏻ button** to wake the device.

WARNING: If using an external power supply and no battery is installed, do not remove the power supply when saving data, as the data may not be saved.

STANDBY MODE

Manually Enter Standby Mode

The user may enter standby mode manually at any time.

1. From the home screen, long press the **Power ⏻ button** to bring up the shutdown screen.

2. Release the **Power ⏻ button** before the 3-second countdown finishes.
3. In manual standby mode, short press the **Power ⏻ button** to wake the device.

Enter Auto Standby Mode

The rifle scope may be set to enter auto standby.

1. In the main menu, turn on auto standby mode. See **Main Menu > Auto Standby** on page 50.
2. The ACE 2 Series will enter auto standby mode when it is tilted up or down at an angle of more than 70° or left or right at an angle of more than 30°. The ACE 2 Series will not enter standby mode while it is in a level firing position.
3. Move the device to wake it from auto standby.

Adjusting the Focus

ADJUSTING THE DIOPTER/EYEPIECE

1. Rotate the eyepiece diopter adjustment ring **(9)** at the rear of the ACE 2 Series right or left until the user interface is clear.
2. Look closely to ensure all icons, the status bars, and the reticle appear sharp and in focus. No additional diopter adjustments are required unless the user wishes to make changes.

NOTES:

- After the initial adjustment, there is no need to rotate the eyepiece adjustment ring **(9)** for long distances or other conditions.
- If necessary during standard use, the objective lens focus ring **(4)** may be rotated to adjust fine focus on the target object being observed. See **Focusing the Objective Lens** below.

FOCUSING THE OBJECTIVE LENS

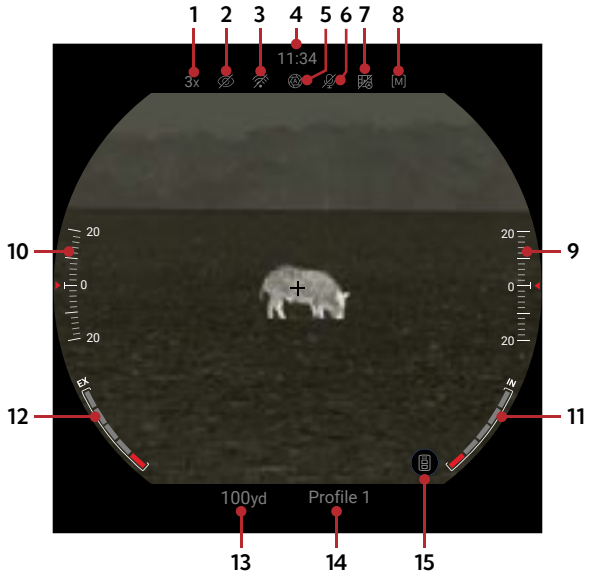
To adjust the focus on the target object:

1. Rotate the objective lens focus ring **(4)** left or right to adjust.

NOTE: Re-adjusting the focus will be necessary if the distance to the target changes.

Status Bar Overview

The status bars at the top and bottom of the screen show information on the operating status of the ACE 2 Series.



1 **Total Magnification:** Shows the real-time magnification.

2 **Ultra-Clear:** Shows the Ultra-Clear status, on or off .

3 **Wi-Fi:** Shows the Wi-Fi status, on or off .

4 **Time:** Shows the set time in 24-hour format.

5 **Non-Uniformity Correction (NUC) Mode:** Shows the selected non-uniformity correction (NUC) mode, automatic Ⓐ, manual Ⓜ, or background Ⓑ. When automatic mode is selected, a countdown timer ⑤ icon will appear when 5 seconds remain until a NUC.

6 **Microphone:** Shows the microphone status, on or off .

7 **Recoil-Activated Video:** Shows the recoil-activated video status, on or off .

8 **Dual Clarity Status (ACE 2 S60R only):** Shows the selected mode, motion [M] or still [S].

9 **Pitch Angle:** Displays when the motion sensor is turned on.

10 **Tilt Angle:** Displays when the motion sensor is turned on.

11 **"IN" Battery Status Indicator:** Shows the status of the built-in battery pack. The charging ⚡ icon appears above it when the device is connected to an external power source.

12 **"EX" Status Indicator:** Shows the status of the optional rechargeable 18650 battery.

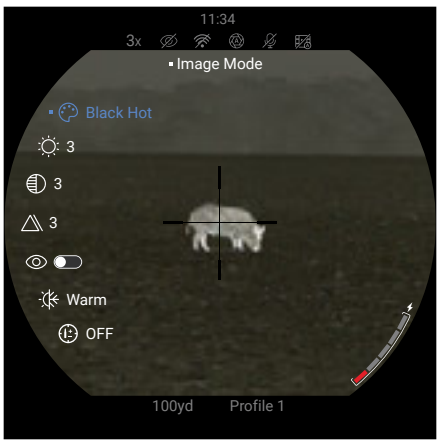
13 **Zero Distance:** Shows the set zero distance.

14 **Zeroing Profile:** Shows the selected zeroing profile.

15 **Remote Status:** The remote icon appears when the optional remote control is connected (remote not included; sold separately)

Using the Quick Menu

In the quick menu, the color palette, screen brightness, image contrast, image sharpness, ultra-clear mode, image hue, and preset ballistic distance can be quickly adjusted. The S60R also has a dual-clarity setting in the quick menu.



- From the home screen, short press the **Menu button** to enter the quick menu.
- Rotate the **Control Turret** to move through the quick menu options. A blue dot marks the cursor location. Selected menu items change from white to blue.
- Short press the **Menu button** to change the parameters. Changes are automatically saved.
- Long press the **Menu button** or short press the **Power button** to exit and return to the home screen
- After 7 seconds of inactivity, the system will automatically exit and return to the home screen.

NOTE: See **Quick Menu Options and Descriptions** on page 28 for detailed information about the quick menu options.

Navigating the Main Menu



- From the home screen, long press the **Menu button** to enter the main menu.
- Rotate the **Control Turret** to move through the menu options. A blue dot marks the cursor location. Selected menu items change from white to blue.
- Short press the **Menu button** to:
  - Change the parameters for the selected menu option; **OR**
  - Enter the submenu; **OR**
  - Confirm submenu changes and return to the previous menu.
- Long press the **Menu button** to confirm any changes and return to the home screen.
- Short press the **Power button** to return to the previous menu without saving.
- After 7 seconds of inactivity, the menu will automatically close, and the interface will return to the home screen. Changes (except changes to toggle on / off menu items, such as Wi-Fi and microphone) are not saved automatically.

NOTE: See **Main Menu Options and Descriptions** on page 31 for detailed information about the main menu options.

9. Zeroing the ACE 2 Series

The ACE 2 Series features a "freeze" zeroing method. To zero the device:

1. Set a suitable target at the desired zero distance.
2. Confirm that the rifle is empty, safe, and pointed in a safe direction, with no ammunition near the weapon.
3. Adjust the image and device settings following the steps in the Quick Start Guide on page 8, if you have not done so already.
4. Select a zeroing profile in the Reticle & Zeroing menu.
5. Then set a zero distance to match the distance to the target.
6. Ensure a stable platform and natural shooting position is achieved behind the rifle.
7. Load ammunition, aim, and take one good shot at the target.
8. Make your rifle safe and observe the location of impact on the target.
9. If the point of impact does not match the point of aim (the center of the reticle), adjust the X/Y position of the reticle.
10. Center the reticle on the aiming point and freeze the image view:
    a. Rotate the **Control Turret** to move to the image freeze ❄ icon.
    b. Short press the **Menu Ⓜ button** to freeze the image.
11. Select the axis (X or Y) along which to move the reticle:
    a. Rotate the **Control Turret** to move between **X** and **Y**.
    b. Short press the **Menu Ⓜ button** to select the desired axis. Adjust the X/Y position of the reticle until the reticle matches the point of impact.
    c. Rotate the **Control Turret** counterclockwise to move in the positive direction: X= Right and Y= Up.
    d. Rotate the **Control Turret** clockwise to move in the negative direction: X= Left and Y= Down.
12. Long press the **Menu Ⓜ button** to save the reticle position.
13. Take a confirmation shot—the point of impact should now match the point of aim. If not, adjust the X/Y position of the reticle again.

For detailed Zeroing instructions, see the **Reticle & Zeroing menu** beginning on page 33.

10. Non-Uniformity Correction

A non-uniformity correction (NUC) allows a thermal imager's sensors to correct its pixels and eliminate any image defects caused by pixel drift. A NUC will be performed automatically each time the ACE 2 Series is powered on.

The ACE 2 Series has three NUC modes: automatic, manual, and background. The icon for the selected NUC mode, automatic Ⓐ, manual Ⓜ, or background Ⓑ, appears in the top status bar. See **Main Menu > Calibration** on page 49.

Automatic Mode

In automatic mode, the ACE 2 Series will perform a NUC automatically according to the internal software algorithm. There is no need to close the objective lens cap as the ACE 2 Series's internal shutter covers the sensor.

When automatic mode is turned on, a countdown timer icon will appear when 5 seconds remain until a NUC. Short pressing the Power button before the 5-second countdown completes will cancel the pending automatic NUC. The timer will appear only after the microbolometer temperature has stabilized—after approximately 10 minutes of continuous operation of the ACE 2 Series.

NOTE: A manual NUC (see below) may be performed at any time while in Automatic mode.

Manual Mode

In manual mode, the user independently determines the need to perform a NUC based on the quality of the observed image. It is not necessary to close the objective lens cap during a manual NUC, as the internal shutter covers the sensor.

To perform a manual NUC while in manual or automatic mode:

1. From the home screen, short press the **Power ⏻ button**.
2. A manual NUC is performed instantly.

Background Mode

In background mode, the user independently determines the need to perform a background NUC based on the quality of the observed image. A background NUC uses less power than an automatic or manual NUC because it does not use the imager shutter to cover the sensor; instead, the user must close the lens cap.

To perform a background NUC while in background mode:

1. Close the objective lens cap **(1)**.
2. From the home screen, short press the **Power ⏻ button**.

3. A prompt to close the lens cap appears onscreen. The background NUC starts after about 2 seconds.

NOTE: If the lens is not properly covered, a temporary "image burn" will remain in the image until the next non-uniformity correction. This "image burn" is temporary and is not a defect or sign of permanent damage.

11. Photography and Video Recording

The ACE 2 Series is equipped with video recording and image capture. All videos and photos are automatically saved to the built-in 64 GB memory storage.

NOTE: Photo and video files are named with the time and date; therefore, it is recommended to set the date and time before using the photo and video functions. See **Settings > Date and Time** on page 57. Alternatively, the date and time may be synchronized in the Nocpix App.

Photography



To take a photo:

1. From the home screen, short press the **Photo button**.
2. The camera icon will appear briefly at the top of the screen to indicate a photo was taken.

NOTE: A red warning icon appears next to the camera icon at the top of the screen when insufficient memory storage (less than 50MB) is available. Transfer video and image files to other storage media to free up space on the memory card.

Video Recording



To record video:

1. Turn on the microphone in the main menu. See **Main Menu > Microphone** on page 49.
2. From the home screen, long press the **Photo button** to start a video recording.
3. When the video recording starts, the recording timer, in HH:MM:SS (minute, second) format, appears in the upper-right corner of the screen.
4. When recording, short press the **Photo button** to take a photo.
5. Long press the **Photo button** to stop and save the video recording.

Recoil Activated Video



When recoil-activated video (RAV) is turned on, the rifle scope will record before and after the shot. See **Main Menu > Recoil** on page 46.

The RAV status, on or off, appears in the top status bar. The video recording timer, in HH:MM:SS (hour, minute, second) format, will appear in the upper-right corner of the screen when recoil-activated video is being recorded.

NOTES:

- The recording duration pre- and post-recoil, recoil sensitivity, and digital zoom settings after the recoil can be set in the main menu.
- When multiple shots are taken within the same 30-second period, only one video will be taken.
- When recoil-activated video recording is turned on, standard video recording is unavailable.

Video and Photography Notes

- You may enter and navigate the menu during video recording.
- The user interface (the status bar, icons, and menu) is captured in recorded video or photo files.
- Recorded photos and videos are saved to the memory card:
  - Photos are saved as JPG files.
  - RAV and standard videos are saved as MP4 files.
  - Photo and video files are saved to folders labeled with the date, YYYYMMDD.
- The number of recorded files is limited only by the capacity of the internal memory.
- Regularly check the available memory storage space and move video footage and images to other storage media to free up space on the memory card.

12. Accessing the Internal Memory

When the ACE 2 Series is turned on and connected to a computer via the included data cable, it is recognized by the computer as a flash memory (USB) drive. This allows the user to access the saved multimedia files and copy or delete any desired files.

To access the internal memory:

1. Turn on the rifle scope.
2. Connect the ACE 2 Series to your computer via the included data cable **(15)**.
3. Double-click **My Computer** on your computer desktop.
4. Double-click to open the device named **NOCPIX**.
5. Double-click to open the device named **ACE 2** to access the built-in memory. Recorded photos and videos are separated into folders by date.
6. Select the desired files or folders to copy or delete.

13. Using the Nocpix App

The ACE 2 Series can be operated using the Nocpix App when connected to a tablet or smartphone or via Wi-Fi.

1. Download the App for free and install it on your device:
   a. Scan a QR code to download it from the App Store or Google Play; **OR**
   b. Download the App from any app store.
2. Connect the ACE 2 Series to Wi-Fi:
   a. Turn on the Wi-Fi. See **Main Menu > Wi-Fi** on page 32 for instructions.
   b. Open the App and tap the **Connect to Device button**. Then, tap **Connect Phone WLAN**.
   c. On the mobile device, go to **Settings > Wi-Fi**.
   d. Select the ACE 2 Series from the list of Wi-Fi networks. It will appear in the list as "ACE 2 XXXX_YYYYYYY" where XXXX is the model number, and YYYYYYY is the device serial number.
   e. Enter the Wi-Fi password and tap the **Join button**. The default password is 12345678.
3. Operate the ACE 2 Series via the App:
   a. Take real-time photos and videos, with or without audio.
   b. View, share, download, and delete photos and videos taken via the App (aaved on the mobile device).
   c. Change the Wi-Fi password and SSID.
   d. Synchronize the date and time from the mobile device.
   e. Update the ACE 2 Series firmware.

NOTE: When a factory reset is performed, the Wi-Fi SSID and password are reset to the defaults, ACE 2 XXXX_YYYYYYY and 12345678. See **Settings > Factory Reset** on page 60.

14. Integrated Laser Rangefinder



The ACE 2 Series is equipped with an integrated, precision laser rangefinder which allows the user to measure the distance to objects up to 1,300 yards away, with ±1-yard accuracy. The laser rangefinder has two rangefinding modes: continuous and single-measurement capture. Continuous rangefinding allows the user to adjust quickly to changing distances for better shot placement.

CAUTION: Do not stare directly into the laser.

The rangefinder interface has the following features:

1 **LRF Reticle:** Appears in the center of the screen in place of the standard reticle.

2 **Rangefinding Mode:** Shows the selected rangefinding mode, CONT (continuous) or SGL (single).

3 **Rangefinding Measurement:** Shows the target distance.

4 **Ballistic Calculation (Single Ranging Only):** Displays when enabled in the menu.

NOTES:

- Ballistic calculation is only available in single ranging mode; it is automatically disabled in continuous ranging mode.
- When the range exceeds the measurable distance, **---- yd** is displayed.
- The rangefinder can be customized in the main menu (see **Main Menu > Laser Rangefinder** on page 43:
  - Set the LRF reticle to always-on, or to display for 2, 5, or 10 seconds after a ranging measurement is taken.
  - Set LRF ranging data to always-on, or to display for 2, 5, or 10 seconds after a ranging measurement is taken.
  - Set the LRF reticle type, color, and brightness level.

- Turn continuous LRF mode on and off. When continuous ranging is active, the distance to the target indicated by the LRF cursor will be refreshed automatically by the rangefinder every second.

- To change the units of measurement (meters or yards), see **Settings > Units** on page 57.

To take a rangefinding measurement:

- **When continuous LRF mode is enabled:**
  - Short press the **Rangefinding button:** Perform a single ranging measurement. **SGL: XXX yd** and the ballistic calculation will be displayed. When enabled, the ballistic calculation appears before the single range measurement.
  - Long press the **Rangefinding button** to activate continuous ranging. **CONT: XXX yd** will be displayed.
  - Long press a second time to deactivate continuous ranging.
- **When continuous LRF mode is disabled:**
  - Short press the **Rangefinding button** and move the LRF cursor to the target, then release the button to trigger a single ranging measurement. **SGL: XXX yd** will be displayed.

NOTE: Ballistic calculation is disabled in continuous ranging mode.

ACCURACY NOTES:

- The measurement accuracy and maximum range depend on the reflection ratio on the target surface, the angle at which the laser beam falls on the target surface, and environmental conditions. Reflectivity depends on the surface texture, color, size, and shape of the object. Typically, a glossy, bright surface will have higher reflectivity than a darker surface.
- Ranging performance can degrade in bright conditions or when ranging towards the sun.
- The measurement accuracy can be affected by fog, smog, heavy rain, snow, and other weather conditions. It can also be affected by a low battery or a dirty or smudged objective lens.
- Measuring the range to a small target is more difficult than measuring the range to a large target.

15. Ocular, Digital, and Hybrid Zoom

The ACE 2 Series uses 2× ocular zoom and digital zoom to increase the base magnification (2× for H35R and S60R; 3× for H50R) to a combined real-time magnification of 20× for H35R, 24× for H50R, or 28× for S60R:

MODEL	BASE	OCULAR	DIGITAL	REAL-TIME MAG
H35R	2×	2×	5×	20×
H50R	3×	2×	4×	24×
S60R	2×	2×	7×	28×

When the hybrid zoom function is enabled in the menu (go to **Custom > Custom Buttons** on page 55), using the ocular zoom lever will adjust the ocular and digital zoom levels at the same time.

To adjust the digital and ocular zoom levels:

1. Rotate the **Control Turret** to adjust the digital zoom level only.
2. **When hybrid zoom is turned OFF:** Rotate the **Ocular Zoom Lever** to adjust the ocular magnification level from 1× to 3×.
3. **When hybrid zoom is turned ON:** Rotate the **Ocular Zoom Lever** to adjust the ocular and digital zoom levels at the same time.
4. The real time magnification appears in the status bar.

NOTES:

- The scroll wheel on the remote control (not included; sold separately) can be used to adjust the digital zoom, but not the ocular zoom.
- If PIP is turned on, adjusting the digital zoom will adjust the zoom level for the PIP image.

The maximum magnification levels may also be adjusted (go to **Custom > Custom Buttons** on page 55):

- ACE 2 H35R can be set to: 12x, 16x, or 20x.
- ACE 2 H50R can be set to: 16x, 20x, or 24x.
- ACE 2 S60R can be set to: 20x, 24x, or 28x.

16. Quick Menu Options and Descriptions

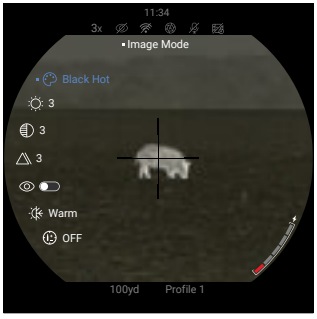
1. Short press the **Menu Ⓜ button** to enter the quick menu.
2. Rotate the **Control Turret** to move through the quick menu options. The selected quick menu icon changes from white to blue.
3. Short press the **Menu Ⓜ button** to toggle through the parameters for each menu item.
4. Long press the **Menu Ⓜ button** to confirm and exit.

Quick Menu Structure:

- Image Mode, Screen Brightness, Image Sharpness, Image Contrast, Ultra Clear, Image Hue, Dual Clarity (S60R Only), and Preset BC Distance.

Image Mode

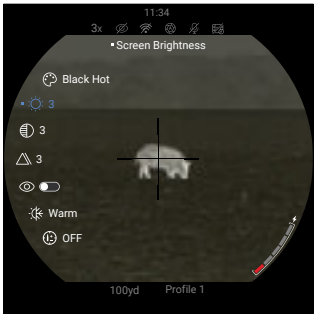
Set the color palette



1. In the quick menu, **Image Mode** is selected by default.
2. Short press the **Menu Ⓜ button** to toggle through the color palette options: White Hot, Black Hot, Red Hot, Color, Violet, Crimson, and Viridian.
3. Long press the **Menu Ⓜ button** to confirm the selection and exit.

Screen Brightness / Image Sharpness / Image Contrast

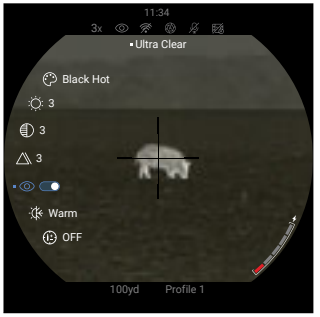
Set the screen brightness, image sharpness, or image contrast



1. In the quick menu, rotate the **Control Turret** to select **Screen Brightness**, **Image Contrast**, or **Image Sharpness**.
2. Short press the **Menu Ⓜ button** to toggle through levels: 1 to 10.
3. Long press the **Menu Ⓜ button** to confirm the selection and exit.

Ultra-Clear

Turn Ultra-Clear mode on or off



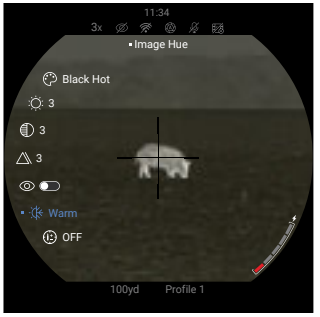
When Ultra-Clear mode is turned on, the image contrast is enhanced, which is suitable for rainy, foggy, or low-contrast conditions.

1. In the quick menu, rotate the **Control Turret** to select **Ultra-Clear**.
2. Short press the **Menu Ⓜ button** to turn the Ultra-Clear toggle ON or OFF. The Ultra-Clear status, on or off, appears in the top status bar.
3. Long press the **Menu Ⓜ button** to return to the home screen.

NOTE: When Ultra-Clear mode is turned on and off, the ACE 2 Series will automatically perform a shuttered non-uniformity correction.

Image Hue

Toggle between warm and cool image hue modes



1. In the quick menu, rotate the **Control Turret** to select **Image Hue**.
2. Short press the **Menu Ⓜ button** to toggle between **Warm** and **Cool**.
3. Long press the **Menu Ⓜ button** to return to the home screen.

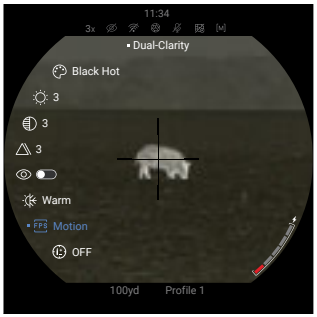


NOTES:

- Cool mode provides a brighter image, and warm mode provides a softer image and reduces eye strain.
- Image hue is available when using the white hot or black hot color palette.

Dual Clarity FPS (S60R Only)

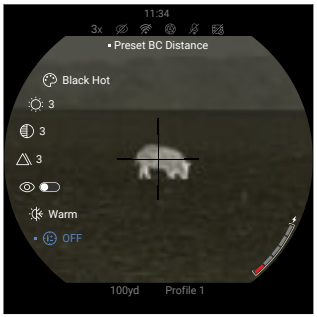
Set the mode to motion or still



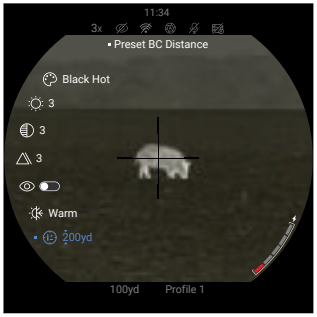
1. In the quick menu, rotate the **Control Turret** to select **Dual Clarity** FPS.
2. Short press the **Menu** Ⓜ **button** to toggle between the two options:
   a. **Motion:** Sets the frame rate to 60Hz; recorded video will be smoother.
   b. **Still:** Sets the frame rate to 30Hz; static images will have higher image resolution.
3. The icon for the selected mode appears in the status bar: [M] (motion) or [S] (still).
4. Long press the **Menu** Ⓜ **button** to return to the home screen.

Preset BC Distance

Enable and select a preset ballistic calculation distance, or add/edit a custom distance



1. In the quick menu, rotate the **Control Turret** to select **Preset BC Distance**.
2. Short press the **Menu** Ⓜ **button** to toggle through the options: OFF, 200yd, 225yd, 250yd, 275yd, 300yd, and **+**.
   a. **OFF:** Disable the preset BC distance.
   b. **Preset BC distances (200yd, 225yd, 250yd, 275yd, 300yd by default):** Ballistic calculation will be performed according to the selected preset distance.
      i. Go to **Reticle & Zeroing > BC Distance** on page 42 to edit the preset distances.
   c. **+:** Add a quick BC distance (see instructions below).



To add a quick BC distance:

1. When **+** is selected, press and hold the **Menu** Ⓜ **button**.
2. "000" appears with a blue arrow above and below the far-left digit to mark the cursor location.
3. Rotate the **Control Turret** to increase or decrease the value of the selected digit from 0 to 9.
4. Short press the **Menu** Ⓜ **button** to switch between the three digits. The two blue arrows move to indicate the selected digit.
5. Long press the **Menu** Ⓜ **button** to save the quick BC distance.
6. The quick menu will close after 7 seconds of inactivity.

NOTE: The quick BC distance can only be edited from the quick menu. To edit, select preset BC distance, short press Menu to toggle through the preset BC distances, and when the quick BC distance is selected, long press Menu to begin editing it.

17. Main Menu Options and Descriptions

1. Long press the **Menu** Ⓜ **button** to enter the main menu.
2. Rotate the **Control Turret** to move through the menu options. The selected menu icon changes from white to blue to mark the cursor location.
3. Short press the **Menu** Ⓜ **button** to toggle through the parameters for each menu item, or enter the submenu.
4. Long press the **Menu** Ⓜ **button** to confirm and exit.

Main Menu Structure:

- **Main Menu:** Wi-Fi, Reticle & Zeroing, Laser Rangefinder, Recoil, PIP, Calibration, Microphone, Auto Standby, Pixel Defect Correction, Motion Sensor, Gallery, Custom, Settings.
- **Wi-Fi Menu:** Wi-Fi, N-Link.
- **Reticle & Zeroing Menu:** Zeroing Profile, Zeroing, Reticle Type, Reticle Color, Reticle Brightness, Ballistic Calculation, BC Type, BC Color, BC Units, BC Parameters, BC Distance, Delete Profile.
- **Laser Rangefinder Menu:** LRF Reticle, Range Data, Type, Color, Brightness, Continuous LRF.
- **Recoil Menu:** RAV, Pre-recoil, Post-recoil, E-Zoom After Recoil, Recoil Sensitivity.
- **Custom Menu:** Custom Palettes, Custom Buttons, Custom Max. Magnification.
- **Settings Menu:** Date, Time, Units, Languages, Compass Calibration, Accessory Connection, Firmware Update, Factory Reset, Info.

Menu option details, descriptions, and navigation instructions are listed in order on the following pages.

Wi-Fi

Turn Wi-Fi or N-Link on or off



Turn on Wi-Fi to operate the ACE 2 Series via the Nocpix App. Turn on N-Link to pair the ACE 2 Series with another Nocpix device to share single-measurement rangefinding data.

NOTE: Wi-Fi and N-Link cannot be used at the same time. When one is turned on, the other is automatically turned off.

1. Long press the **Menu Ⓜ button** to enter the main menu.
2. **Wi-Fi** is selected by default. Short press the **Menu Ⓜ button** to enter the Wi-Fi submenu.

WI-FI > WI-FI TOGGLE



Turn Wi-Fi on or off

1. In the Wi-Fi submenu, short press the **Menu Ⓜ button** to turn the **Wi-Fi toggle** ON or OFF. The Wi-Fi status, on or off, appears in the status bar.
2. Long press the **Menu Ⓜ button** to confirm and exit.

WI-FI > N-LINK TOGGLE





Connect Nocpix devices

To connect the ACE 2 Series to another Nocpix device via N-Link:

1. On the other Nocpix device: turn on Wi-Fi.
2. On the ACE 2: In the Wi-Fi submenu, rotate the **Control Turret** to move to the **N-Link toggle**, and short press the **Menu Ⓜ button** to turn it ON.
3. A list of nearby Nocpix devices is displayed, and the N-Link icon appears in the status bar.
4. Rotate the **Control Turret** to move up or down in the device list, and short press the **Menu Ⓜ button** to select a device to connect to it.
5. When the ACE 2 Series is successfully connected to another Nocpix device, a checkmark appears to the right of the device name, and the N-Link device connection icon appears in the status bar; the icon indicates the number of connected devices.
6. Long press the **Menu Ⓜ button** to confirm and exit.

NOTE: When a single rangefinder measurement is taken on the ACE 2 Series, the distance and image view will be transmitted to the connected Nocpix device. Continuous rangefinding data cannot be shared.

Reticle & Zeroing



Choose a zeroing profile and adjust the reticle, zeroing, and ballistic calculation settings

1. Long press the **Menu Ⓜ button** to enter the main menu.
2. Rotate the **Control Turret** to select **Reticle & Zeroing**.
3. Short press the **Menu Ⓜ button** to enter the submenu.

RETICLE & ZEROING > ZEROING PROFILE



Select or add a zeroing profile

1. In the reticle & zeroing submenu, **Profile 1** is selected by default.
2. Short press the **Menu Ⓜ button** to enter the submenu to begin customizing the Profile 1 options; OR
3. Add a new zeroing profile:
   a. Rotate the **Control Turret** to move to the **Add ⊕ icon**.
   b. Short press the **Menu Ⓜ button** to add a new profile. The ACE 2 supports up to eight profiles (Profile 1 to Profile 8).



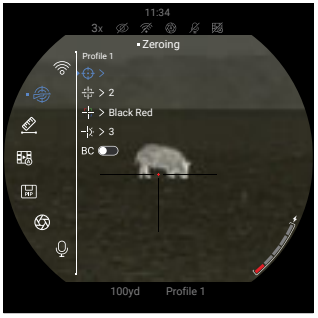
   c. Short press the **Menu Ⓜ button** a second time to select the new profile and begin customizing it.

4. When a zeroing profile is selected, the user can:
    a. Customize the zero distance and reticle position.
    b. Change the reticle type, color, and brightness.
    c. Turn ballistic calculation on or off.
    d. Adjust the ballistic calculation options: color and type, units, parameters, and preset distances.
    e. Delete the selected zeroing profile.

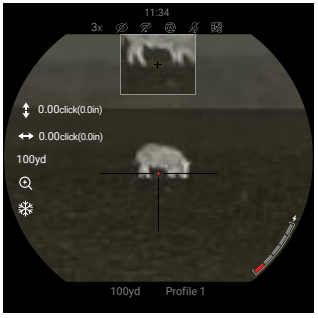
NOTE: The zeroing profile names and parameters can be edited in the Nocpix App.

RETICLE & ZEROING > ZEROING

Customize the zero distance and adjust the reticle position for the selected zero profile to match the point of impact

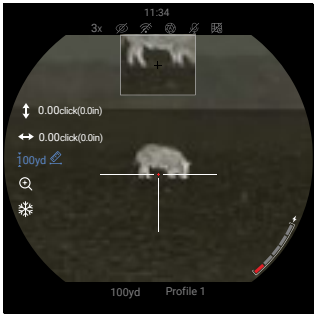


1. In the submenu for the selected zeroing profile, **Zeroing** is selected by default.
2. Short press the **Menu** **button** to select it and enter the reticle zeroing interface.

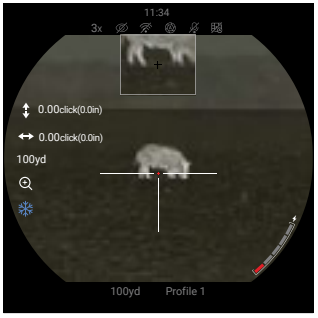


3. The zeroing interface has the following features:
    1 **Y-Axis** : **Click:** At 1× zoom, 1 pixel of movement = 1 click; 2× zoom = 0.5 click; 4× zoom = 0.25 click. **cm/in:** Vertical point of impact change, in cm or inches (the actual distance at the current zoom level and zero distance).
    2 **X-Axis** : **Click:** At 1× zoom, 1 pixel of movement = 1 click; 2× zoom = 0.5 click; 4× zoom = 0.25 click. **cm/in:** Horizontal point of impact change, in cm or inches (the actual distance at the current zoom level and zero distance).
    3 **Zero Distance:** Select to customize the zero distance.
    4 **Zoom** : Select to change the zoom level.
    5 **Freeze** : Select to freeze the image.
    6 **Reticle:** Shows the new reticle position.
    7 **White Dot:** Indicates the center of the original reticle position.

4. To edit the zero distance or use the LRF ranging distance:



    a. Rotate the **Control Turret** to move the cursor to the zero distance.
    b. Short press the **Menu** **button** to begin editing it. Blue arrows appear above and below the far-left digit to mark the cursor location.
    c. Short press the **Menu** **button** to switch between the three digits and the LRF range icon. The blue arrows move to indicate the selection.
    d. **To manually set the zero distance:** Rotate the **Control Turret** to increase or decrease the value of the selected digit from 0 to 9.
    e. **To use the ranging distance:** Short press the **Rangefinding** **button** with the LRF icon selected to take a rangefinding measurement and set it as the zeroing distance.
    f. To stop editing the zero distance, short press the **Menu** **button** until the blue arrow editing arrows disappear.
5. Center the reticle on the aiming point and freeze the image view.

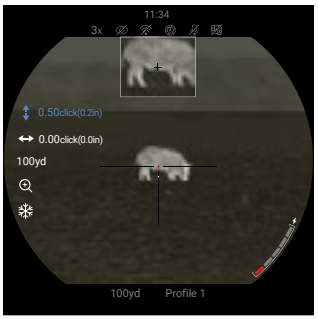


    a. Rotate the **Control Turret** to move to the image freeze icon.
    b. Short press the **Menu** **button** to freeze the image. The freeze icon will change from white to blue. Short press the **Menu** **button** a second time to unfreeze.
6. Adjust the zoom level, as needed:



    a. Rotate the **Control Turret** to move to the zoom icon.
    b. Short press the **Menu** **button** to select it.
    c. Rotate the **Control Turret** to zoom in or out. The real-time amplification appears in the top status bar.

7. Select the axis (X or Y) along which to move the reticle:
   a. Rotate the **Control Turret** to move the cursor between **X** and **Y**. The axis icon will change from white to blue to mark the cursor location.
   b. Short press the **Menu Ⓜ button** to select the desired axis. The selected axis will begin flashing.
8. Adjust the X/Y position of the reticle until the reticle matches the point of impact.



   a. **X** (horizontal) is the windage and **Y** (vertical) is the elevation.
   b. A white dot will appear onscreen, representing the original position of the reticle.
   c. Rotate the **Control Turret** counterclockwise to move in the positive direction: X= Right and Y= Up.
   d. Rotate the **Control Turret** clockwise to move in the negative direction: X= Left and Y= Down.
   e. Rotate one click to move the cursor in the corresponding direction by 1 pixel. One full rotation (20 clicks) is equivalent to 20 pixels.
   f. The click and cm/in parameters for the X-axis and Y-axis represent the movement of the reticle. **NOTE:** After exiting the zeroing menu, the click value is saved, and the cm/in value is reset to zero.
      i. **Click parameter:** Represents the pixel movement at the selected zoom level. At 1× zoom, 1 pixel of movement = 1 click; 2× zoom = 0.5 click; 4× zoom = 0.25 click.
      ii. **Cm/in parameter:** Is the horizontal or vertical point of impact change at the current zoom level and zero distance:

MODEL	DISTANCE (YARDS)	ONE CLICK (INCHES)
H35R	50	0.43
	100	0.86
	200	1.72
H50R	50	0.24
	100	0.47
	200	0.94
S60R	50	0.43
	100	0.86
	200	1.72

   g. The distance of your X/Y adjustments will update automatically when the zero distance is changed, for example, from 100 to 200 yards.

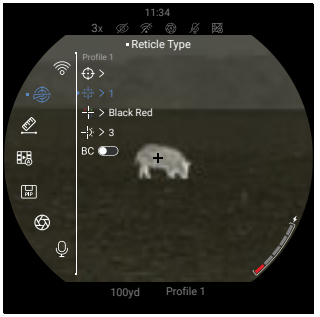
9. Short press the **Menu Ⓜ button** to save the position for the selected axis and deselect it. When deselected, the axis will stop flashing.
10. Repeat steps 7–9 to adjust the reticle position along the second axis if needed.
11. Long press the **Menu Ⓜ button** to save or clear changes.
12. A confirmation window will open.



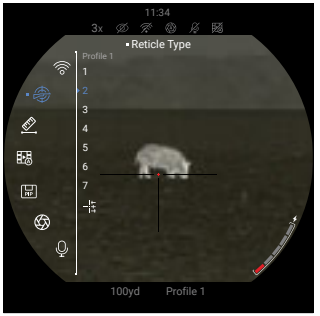
13. Short press the **Menu Ⓜ button** to select **Yes** to save the reticle position.
14. Rotate the **Control Turret** to move to **No**, and short press the **Menu Ⓜ button** to exit without saving.
15. Take a confirmation shot—the point of impact should now match the point of aim. If not, adjust the X/Y position of the reticle again.

RETICLE & ZEROING > RETICLE TYPE

Select the reticle type



1. In the reticle & zeroing submenu, rotate the **Control Turret** to select **Reticle Type**.
2. Short press the **Menu Ⓜ button** to enter the reticle type submenu.
3. Rotate the **Control Turret** to move through reticle types, 1 to 7 (see below). The reticle changes in real time as the cursor moves through the reticle types. A custom reticle is also available for purchase in the Nocpix App.



4. Long press the **Menu Ⓜ button** to confirm the selection and return to the previous menu.

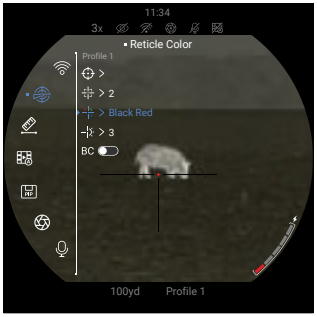
Reticle Types



1 2 3 4 5 6 7

RETICLE & ZEROING > RETICLE COLOR

Select the reticle color



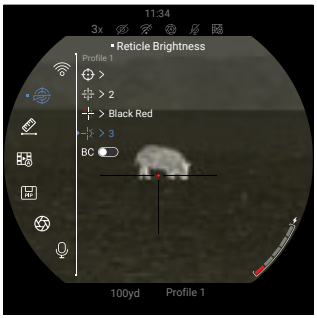
1. In the reticle & zeroing submenu, rotate the **Control Turret** to select **Reticle Color**.
2. Short press the **Menu** Ⓜ **button** to enter the submenu.
3. Rotate the **Control Turret** to move through color options: Black Red, Black Green, White Red, White Green, Black White, White Black, Red, Green, or Yellow. The reticle color changes as the cursor moves through the color options.
4. Long press the **Menu** Ⓜ **button** to confirm the selection and return to the previous menu.



NOTE: For two-color reticles, the first color is the color of the stadia lines, and the second is the center cross color.

RETICLE & ZEROING > RETICLE BRIGHTNESS

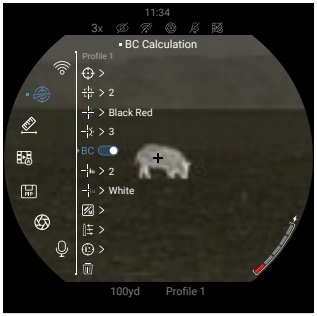
Select the reticle brightness



1. In the reticle & zeroing submenu, rotate the **Control Turret** to select **Reticle Brightness**.
2. Short press the **Menu** Ⓜ **button** to enter the submenu.
3. Rotate the **Control Turret** to adjust the brightness from 1 to 6. The reticle brightness changes as the cursor moves through the options.
4. Long press the **Menu** Ⓜ **button** to confirm the selection and return to the previous menu.

RETICLE & ZEROING > BALLISTIC CALCULATION BC

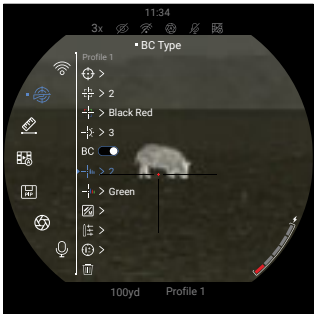
Turn ballistic calculation on or off



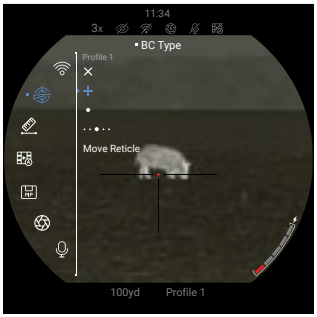
1. In the reticle & zeroing submenu, rotate the **Control Turret** to select **Ballistic Calculation** BC.
2. Short press the **Menu** Ⓜ **button** to turn the ballistic calculation toggle ON or OFF. When ballistic calculation is enabled:
   a. When a single ranging measurement is taken, ballistic calculation data (MOA/mil/cm/inch) will display below the range distance, and the reticle will display the predicted impact-point position.
   b. The following menu items will appear in the ballistic calculation submenu: BC type, BC color, BC units, BC parameter, and BC distance.
3. Long press the **Menu** Ⓜ **button** to confirm the selection and return to the previous menu.

RETICLE & ZEROING > BC TYPE

Set the reticle type for the suggested point of aim



1. In the reticle & zeroing submenu, rotate the **Control Turret** to select **BC Type**.
2. Short press the **Menu** Ⓜ **button** to enter the submenu.
3. Rotate the **Control Turret** to move through the options: ×, +, •, ···•···, and Move Reticle.
4. Long press the **Menu** Ⓜ **button** to confirm the selection and return to the previous menu.

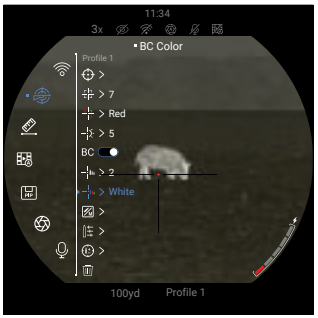


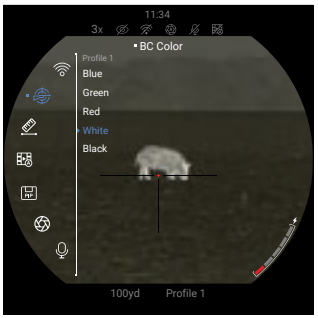
NOTE: When **Move Reticle** is selected, the ACE 2 will automatically move the original reticle to the suggested point of aim.

RETICLE & ZEROING > BC COLOR

Set the reticle color for the suggested point of aim

1. In the reticle & zeroing submenu, rotate the **Control Turret** to select **BC Color**.
2. Short press the **Menu** Ⓜ **button** to enter the color submenu.
3. Rotate the **Control Turret** to move through the options: Blue, Green, Red, White, and Black.
4. Long press the **Menu** Ⓜ **button** to confirm the selection and return to the previous menu.

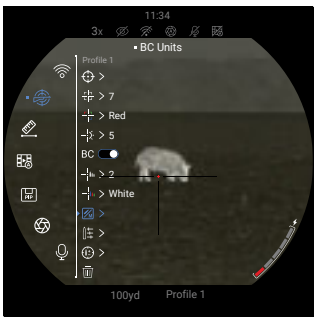


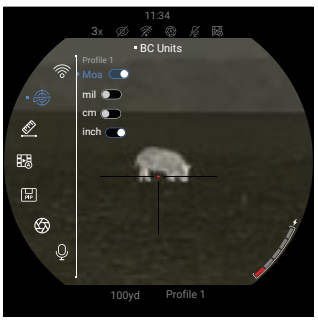


RETICLE & ZEROING > BC UNITS

Set the units of measurement for ballistic calculation

1. In the reticle & zeroing submenu, rotate the **Control Turret** to select **BC Units**.
2. Short press the **Menu** Ⓜ **button** to enter the submenu.
3. Rotate the **Control Turret** to move through the unit toggles.
4. Short press the **Menu** Ⓜ **button** to turn the unit toggles ON or OFF:
   a. Set the angular units to **MOA** or **mil**; only one can be turned on.
   b. Set the linear units to **cm** or **inches**; only one can be turned on, but both can be turned off.
5. Long press the **Menu** Ⓜ **button** to confirm changes and return to the previous menu.

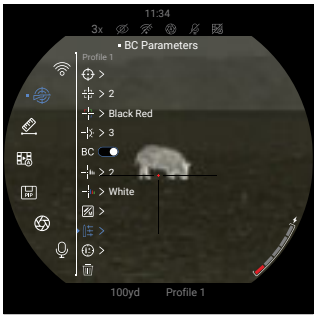


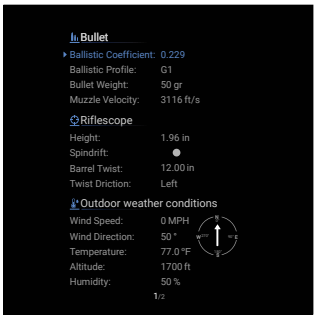


RETICLE & ZEROING > BC PARAMETERS

Set parameters for bullet, rifle scope, and weather conditions

1. In the reticle & zeroing submenu, rotate the **Control Turret** to select **BC Parameters**.
2. Short press the **Menu** Ⓜ **button** to enter the submenu.
3. Rotate the **Control Turret** to move to a parameter, and short press the **Menu** Ⓜ **button** to begin editing it:
   a. When editing non-numerical parameters, such as ballistic profile, short press the **Menu** Ⓜ **button** to toggle through the options.
   b. When editing numerical values:
      i. Blue arrows appear above and below the far-left digit to mark the cursor location.
      ii. Rotate the **Control Turret** to increase or decrease the value of the selected digit from 0 to 9.
      iii. Short press the **Menu** Ⓜ **button** to switch between the digits. The blue arrows move to indicate the selected digit.
   c. Short press the **Power** ⏻ **button** to stop editing without saving; **OR**
   d. Long press the **Menu** Ⓜ **button** to confirm edits and return.
4. When all parameters have been edited:
   a. Short press the **Power** ⏻ **button** to exit the parameters interface without saving; **OR**
   b. Long press the **Menu** Ⓜ **button** to confirm all parameter changes and return to the previous menu.

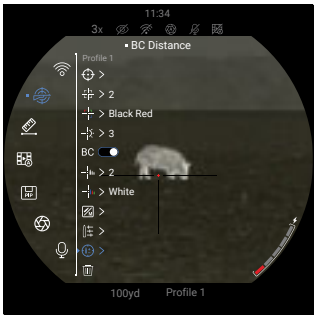




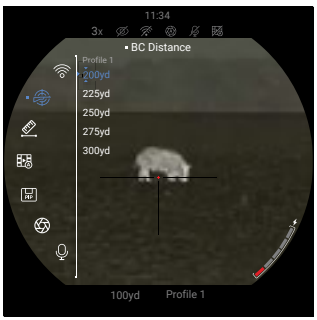
NOTES: The ballistic parameters on this screen can also be adjusted in the Nocpix App.

RETICLE & ZEROING > BC DISTANCE

Edit the default preset ballistic calculation distances that appear in the quick menu (200yd, 225yd, 250m, 275yd, and 300yd)



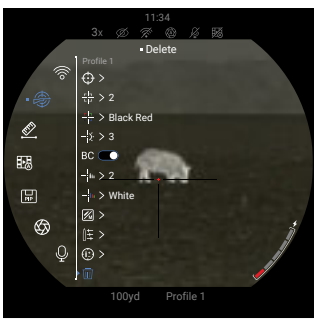
1. In the reticle & zeroing submenu, rotate the **Control Turret** to select **BC Distance**.
2. Short press the **Menu (M) button** to enter the submenu.
3. Rotate the **Control Turret** to move to a BC distance, and short press the **Menu (M) button** to begin editing it.



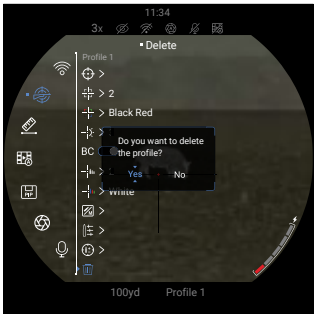
4. Blue arrows appear above and below the far-left digit to mark the cursor location.
5. Short press the **Menu (M) button** to switch between the three digits. The blue arrows move to indicate the selection.
6. Rotate the **Control Turret** to increase or decrease the value of the selected digit from 0 to 9.
7. Long press the **Menu (M) button** to save the changes and return to the distance selection submenu. The preset BC distances shown in the quick menu are updated automatically.
8. Long press the **Menu (M) button** a second time to return to the previous menu.

RETICLE & ZEROING > DELETE PROFILE

Delete the selected zeroing profile



1. In the reticle & zeroing submenu, rotate the **Control Turret** to select **Delete**.
2. Short press the **Menu (M) button** to delete the selected zeroing profile.
3. A pop-up window shows the message "Do you want to delete the profile?" and two options: Yes and No.
4. Short press the **Menu (M) button** to select **No** to return to the previous menu without deleting the zeroing profile; **OR**



5. Rotate the **Control Turret** to select **Yes**, and short press the **Menu (M) button** to delete the profile and return to the previous menu.

Laser Rangefinder

Customize the rangefinder cursor and turn continuous LRF on or off



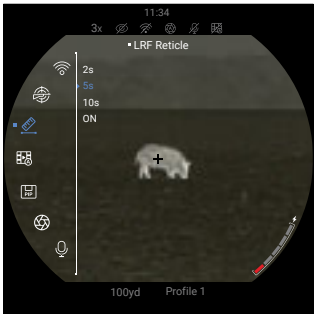
1. In the main menu, rotate the **Control Turret** to select **Laser Rangefinder**.
2. Short press the **Menu (M) button** to enter the submenu.

LASER RANGEFINDER > LRF RETICLE

Set the display duration for the LRF reticle



1. In the laser rangefinder submenu, rotate the **Control Turret** to select **LRF Reticle**.
2. Short press the **Menu (M) button** to enter the submenu.
3. Rotate the **Control Turret** to move through options: 2s, 5s, 10s, or ON.
   a. **2s, 5s, 10s:** After taking a ranging measurement, the LRF reticle will disappear automatically after the set duration.
   b. **ON:** Sets the LRF reticle to "always on"; the LRF reticle will not time out when the rangefinder is in use.



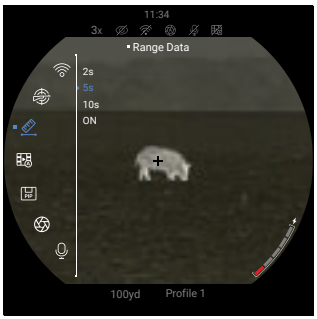
4. Long press the **Menu (M) button** to confirm the selection and return to the previous menu.

LASER RANGEFINDER > RANGE DATA

Set the display duration for the ranging data

Set the duration that single ranging data remains on the screen.





1. In the laser rangefinder submenu, rotate the **Control Turret** to select **Range Data**.
2. Short press the **Menu** Ⓜ **button** to enter the submenu.
3. Rotate the **Control Turret** to move through options: 2s, 5s, 10s, or ON.
    a. **2s, 5s, 10s:** After taking a ranging measurement, the ranging data will disappear automatically after the set duration.
    b. **ON:** Sets the ranging data to "always on".
4. Long press the **Menu** Ⓜ **button** to confirm the selection and return to the previous menu.

LASER RANGEFINDER > TYPE

Select the LRF reticle type





1. In the laser rangefinder submenu, rotate the **Control Turret** to select **Type**.
2. Short press the **Menu** Ⓜ **button** to enter the submenu.
3. Rotate the **Control Turret** to move through the type options: ⛶, ✧, ●, and ○.
4. Long press the **Menu** Ⓜ **button** to confirm the selection and return to the previous menu.

LASER RANGEFINDER > COLOR

Select the LRF reticle color

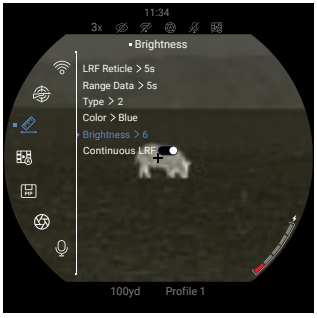




1. In the laser rangefinder submenu, rotate the **Control Turret** to select **Color**.
2. Short press the **Menu** Ⓜ **button** to enter the submenu.
3. Rotate the **Control Turret** to move through color options: Blue, Green, Red, White, Black, and Yellow.
4. Long press the **Menu** Ⓜ **button** to confirm the selection and return to the previous menu.

LASER RANGEFINDER > BRIGHTNESS

Set the LRF reticle brightness

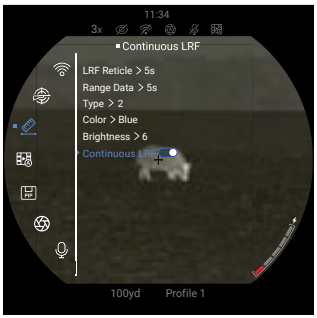




1. In the laser rangefinder submenu, rotate the **Control Turret** to select **Brightness**.
2. Short press the **Menu** Ⓜ **button** to enter the submenu.
3. Rotate the **Control Turret** to select a brightness level, from 1 to 6.
4. Long press the **Menu** Ⓜ **button** to confirm the selection and return to the previous menu.

LASER RANGEFINDER > CONTINUOUS LRF

Turn continuous LRF mode on or off



1. In the laser rangefinder submenu, rotate the **Control Turret** to select the **Continuous LRF toggle**.
2. Short press the **Menu Ⓜ button** to turn the Continuous LRF toggle ON or OFF.
3. Long press the **Menu Ⓜ button** to confirm the selection and return to the previous menu.

Recoil

Turn recoil-activated video (RAV) on or off and adjust the RAV settings



1. Long press the **Menu Ⓜ button** to enter the main menu.
2. Rotate the **Control Turret** to select **Recoil**.
3. Short press the **Menu Ⓜ button** to enter the submenu.

RECOIL > RAV

Turn RAV on or off



1. In the recoil submenu, short press the **Menu Ⓜ button** a second time to turn the RAV toggle ON or OFF.
   a. The RAV status, on or off, appears in the status bar.
   b. The video recording timer, in HH:MM:SS (hour, minute, second) format, will appear in the upper-right corner of the screen RAV is recording.



2. When turned on, the video recording duration for pre-recoil and post-recoil may be set:
   a. Rotate the **Control Turret** to move to **Pre-recoil** or **Post-recoil**.
   b. Short press the **Menu Ⓜ button** to edit the selected setting. A blue arrow appears above and below the value.
   c. Rotate the **Control Turret** to set recording time:
      i. **Pre-recoil:** Set to 5 or 10 seconds.
      ii. **Post-recoil:** Set to 5, 10, 20, 30, or 60 seconds.
   d. Short press the **Menu Ⓜ button** to deselect.
3. Long press the **Menu Ⓜ button** to confirm the selection and return to the previous menu.



RECOIL > E-ZOOM AFTER RECOIL

Set the ACE 2 to retain the pre-shot zoom level or reset to 1× after each shot



1. In the recoil submenu, rotate the **Control Turret** to move to **E-Zoom After Recoil**.
2. Short press the **Menu Ⓜ button** to enter the submenu.
3. Rotate the **Control Turret** to toggle through the options: Original or 1×.
   a. **Original:** The digital zoom level in place before the shot will remain.
   b. **1×:** The digital zoom level will automatically reset to 1× after the shot.
4. Long press the **Menu Ⓜ button** to confirm the selection and return to the previous menu.



RECOIL > RECOIL SENSITIVITY

To adjust the recoil sensitivity





1. In the recoil submenu, rotate the **Control Turret** to move to **Recoil Sensitivity**.
2. Short press the **Menu** Ⓜ **button** to enter the submenu.
3. Rotate the **Control Turret** to toggle through the sensitivity levels, 1 to 6.
   a. **Smaller values:** It is easier to trigger the recoil recording, which is suitable for a smaller bullet (the sensitivity is higher).
   b. **Larger values:** It is more difficult to trigger the recoil recording, which is suitable for a larger bullet (the sensitivity is lower)
4. Long press the **Menu** Ⓜ **button** to confirm the selection and return to the previous menu.

NOTES:

- When multiple shots are taken within the same 30-second period, only one video is recorded.
- When recoil-activated video recording is turned on, standard video recording is unavailable.

PIP

Turn PIP on or off



1. Long press the **Menu** Ⓜ **button** to enter the main menu.
2. Rotate the **Control Turret** to select **PIP**.
3. Short press the **Menu** Ⓜ **button** to turn the PIP toggle ON or OFF.
4. Long press the **Menu** Ⓜ **button** to return to the home screen.

NOTE: If PIP is turned on, rotating the **Control Turret** will adjust the digital zoom level for the PIP image.

Calibration

Set the non-uniformity correction (NUC)





1. Long press the **Menu** Ⓜ **button** to enter the main menu.
2. Rotate the **Control Turret** to select **Calibration**.
3. Short press the **Menu** Ⓜ **button** to enter the submenu.
4. Rotate the **Control Turret** to move through the NUC mode options: Automatic, Manual, and Background.
5. The selected NUC mode, Automatic Ⓐ, Manual Ⓜ, or Background Ⓑ, appears in the top status bar.
6. Long press the **Menu** Ⓜ **button** to confirm the selection and return to the home screen.

Microphone

Turn the microphone on or off



1. Long press the **Menu** Ⓜ **button** to enter the main menu.
2. Rotate the **Control Turret** to select **Microphone**.
3. Short press the **Menu** Ⓜ **button** to turn the microphone toggle ON or OFF.
4. The microphone status, on or off, appears in the top status bar.
5. Long press the **Menu** Ⓜ **button** to return to the home screen.

Auto Standby



Turn on automatic standby mode

1. Long press the **Menu** Ⓜ **button** to enter the main menu.
2. Rotate the **Control Turret** to select **Auto Standby**.
3. Short press the **Menu** Ⓜ **button** to the standby toggle ON or OFF.
4. Long press the **Menu** Ⓜ **button** to confirm the selection and return to the home screen.

NOTES:

- When auto standby mode is turned on:
  - The rifle scope will enter standby automatically when it is tilted up or down at an angle of more than 70° or left or right at an angle of more than 30°.
  - Move the device to wake it from auto standby mode.
  - The rifle scope will not enter auto standby while it is in a level firing position.
- When auto standby is turned off, the rifle scope will operate until the batteries run out.

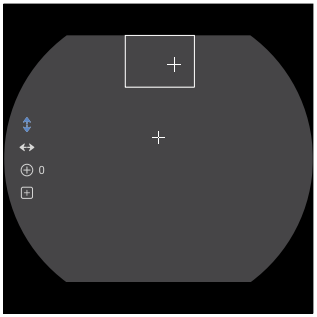
Pixel Defect Correction



Select and correct defective pixels

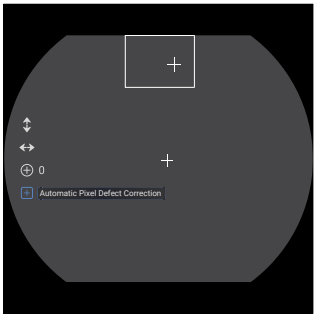
Defective pixels are pixels that do not change correctly compared to the other image pixels—they are either brighter or darker than surrounding pixels. The ACE 2 Series has a tool that corrects defective pixels on the sensor using its internal software.

1. Long press the **Menu** Ⓜ **button** to enter the main menu.
2. Rotate the **Control Turret** to select the pixel defect correction menu option.
3. Short press the **Menu** Ⓜ **button** to enter the defective pixel correction interface.
4. The interface has the following features:



   1 **Cursor:** The pixel cursor appears in the center of the screen in place of the reticle. Move the cursor to the position of the defective pixel.
   2 **PIP Window:** Shows a close-up view of the cursor location.
   3 **Y-Axis ↕ Icon:** Select to move the pixel cursor vertically.
   4 **X-Axis ↔ Icon:** Select to move the pixel cursor horizontally.
   5 **Add ⊕ Icon:** Select to add a defective pixel to the "to be corrected" list. Shows the number of defective pixels in the list.
   6 **Automatic Pixel Correction ⊞ Icon:** Select to automatically correct all defective pixels.

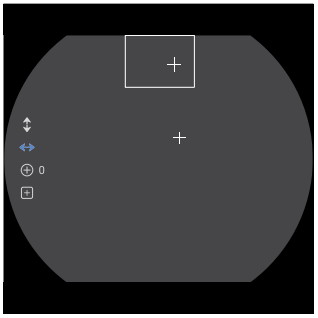
To auto-correct defective pixels:



1. Rotate the **Control Turret** to move to the automatic pixel correction ⊞ icon. The icon turns blue to mark the cursor location.
2. Short press the **Menu** Ⓜ **button** to correct all defective pixels automatically.

NOTE: If the algorithm fails to locate all defective pixels, it may be necessary to manually correct additional pixels.

To manually select and correct defective pixels:

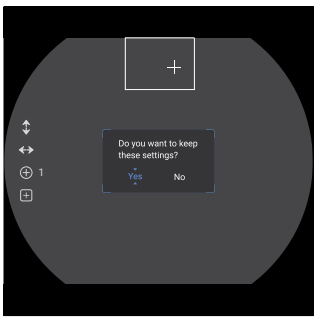


3. Rotate the **Control Turret** to move between **X** and **Y**. The cursor location is marked by a blue icon.
4. Short press the **Menu** Ⓜ **button** to select the axis of movement, **X** or **Y**. The selected axis begins flashing.
5. Move the cursor along the selected axis to the location of the defective pixel:
   a. Rotate the **Control Turret** counterclockwise to move in the positive direction: X= Right and Y= Up.

b. Rotate the **Control Turret** clockwise to move in the negative direction: X= Left and Y= Down.

c. Rotate one click to move the cursor in the corresponding direction by 1 pixel. One full rotation (20 clicks) is equivalent to 20 pixels.

6. Short press the **Menu Ⓜ button** to save the position for the selected axis and deselect it. When deselected, the axis will change from blue to white.
7. Repeat steps 3–6 to move the cursor along the second axis as needed.
8. With the pixel cursor position saved and marking the location of the defective pixel, use the **Control Turret** to move to the add ⊕ icon, then short press the **Menu Ⓜ button** to add the pixel to the "to be corrected" list.
   a. ⊕ **0** will change to ⊕ **1** to indicate that one pixel has been added to the correction list.
9. If the defective pixel has been added in error, short press the **Menu Ⓜ button** a second time from the same X/Y coordinates (do not move the cursor) to remove the pixel from the "to be corrected" list.
10. Repeat the above steps to add additional defective pixels, as needed.
11. When all defective pixels have been added to the list, long press the **Menu Ⓜ button** to confirm changes.
12. A pop-up window shows the message "Do you want to keep these settings?" and two options: Yes and No.



13. Short press the **Menu Ⓜ button** to select **Yes** to correct the saved list of defective pixels and exit to the home screen.
14. Rotate the **Control Turret** to move to **No** and short press the **Menu Ⓜ button** to exit to the main menu without correcting any defective pixels.

NOTE: The PIP window will move to the bottom of the screen when the cursor moves into the top of the screen.

Motion Sensor



Turn the motion sensor on or off

1. Long press the **Menu Ⓜ button** to enter the main menu.
2. Rotate the **Control Turret** to select **Motion Sensor**.
3. Short press the **Menu Ⓜ button** to enter the submenu.
4. Rotate the **Control Turret** to ove between Tilt Angles and Compass.



5. Short press the **Menu Ⓜ button** to turn the selected toggle ON or OFF.
6. When the **Tilt Angles** toggle is turned on, the tilt angle appears on the left side of the screen and the pitch angle appears on the right side. When the **Compass** toggle is turned on, the digital compass appears at the top of the screen.
7. Long press the **Control Turret** to save and return to the home screen.

Gallery

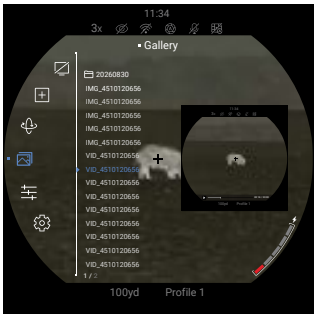


View photos and videos saved to the device

1. Long press the **Menu Ⓜ button** to enter the main menu.
2. Rotate the **Control Turret** to select **Gallery**.
3. Short press the **Menu Ⓜ button** to enter the submenu.
4. Rotate the **Control Turret** to move through the multimedia folders. Folders are named by date in YYYY. MM.DD format.



5. Short press the **Menu** Ⓜ **button** to select a folder, then rotate the **Control Turret** to navigate through the image and video files. A thumbnail of the selected file appears on the right side of the screen.
6. Short press the **Menu** Ⓜ **button** to view an image or video in full screen.
   a. Short press the **Menu** Ⓜ **button** to play and pause videos.
   b. Rotate the **Control Turret** to fast forward or rewind videos.
7. Short press the **Power** ⏻ **button** to return to the list of files.
8. Long press the **Menu** Ⓜ **button** to return to the home screen.



Custom

Customize the color palettes appearing in the quick menu, the button actions for the device / remote, or the max digital zoom levels

1. Long press the **Menu** Ⓜ **button** to enter the main menu.
2. Rotate the **Control Turret** to select **Custom**.
3. Short press the **Menu** Ⓜ **button** to enter the submenu.



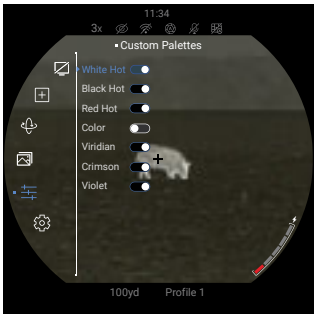
CUSTOM > CUSTOM PALETTES

Customize the color palettes that appear in the quick menu, so that only frequently used colors appear

1. In the custom submenu, rotate the **Control Turret** to select **Custom Palettes**.
2. Short press the **Menu** Ⓜ **button** to enter the submenu.
3. Rotate the **Control Turret** to move through the toggles for the available color palettes: White Hot, Black Hot, Red Hot, Color, Viridian, Crimson, and Violet.



4. Short press the **Menu** Ⓜ **button** to turn a color palette toggle on or off. Colors set to off will not appear in the quick menu. At least one color palette must stay on.
5. Long press the **Menu** Ⓜ **button** to confirm the selection and return to the previous menu.

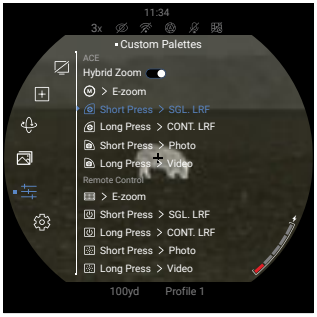


CUSTOM > CUSTOM BUTTONS

Customize button actions for the ACE 2 or the remote control

1. In the custom submenu, rotate the **Control Turret** to select **Custom Buttons**.
2. Short press the **Menu** Ⓜ **button** to enter the submenu.
3. Rotate the **Control Turret** to move through the options that can be customized, and short press the **Menu** Ⓜ **button** to select:
   a. **ACE 2:**
      i. **Hybrid Zoom:** Enable or disable hybrid zoom.
      ii. **Rangefinder Button:** Actions for short press and long press.
      iii. **Photo Button:** Actions for short press and long press.
   b. **Remote Control (not included; sold separately):**
      i. **Scroll Wheel:** Action performed when scrolling.
      ii. **Button:** Actions for short press and long press.
      iii. **Button:** Actions for short press and long press.





4. Rotate the **Control Turret** to move through the available button actions:
   a. Single LRF
   b. Continuous LRF
   c. PIP
   d. Palettes
   e. Brightness
   f. Photo
   g. Video



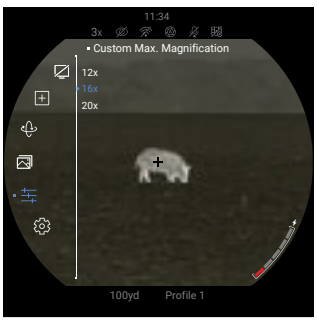
5. Long press the **Menu** Ⓜ **button** to confirm changes and return to button selection.
6. Long press the **Menu** Ⓜ **button** a second time to return to the previous menu.

CUSTOM > CUSTOM MAX MAGNIFICATION

Customize the maximum digital zoom level

1. In the custom submenu, rotate the **Control Turret** to select **Custom Max Magnification**.
2. Short press the **Menu** Ⓜ **button** to enter the submenu.
3. Rotate the **Control Turret** to move through the maximum digital zoom level options:
   a. H35R: 12x, 16x, or 20x.
   b. H50R: 16x, 20x, or 24x.
   c. S60R: 20x, 24x, or 28x.
4. Long press the **Menu** Ⓜ **button** to confirm the selection and return to the previous menu.





Settings

Adjust the general settings

1. Long press the **Menu** Ⓜ **button** to enter the main menu.
2. Rotate the **Control Turret** to select **Settings**.
3. Short press the **Menu** Ⓜ **button** to enter the settings submenu.



SETTINGS > DATE

Set the date

1. In the settings submenu, rotate the **Control Turret** to select **Date**.
2. Short press the **Menu** Ⓜ **button** to edit the date, displayed in YYYY.MM.DD format. A blue arrow will appear above and below the year digit.
3. Rotate the **Control Turret** to select the correct value for each digit (year, month, and day).
4. Short press the **Menu** Ⓜ **button** to switch between digits. The two arrows move to indicate the selected digit.
5. Long press the **Menu** Ⓜ **button** to save the date and return to the home screen.



SETTINGS > TIME

Set the time

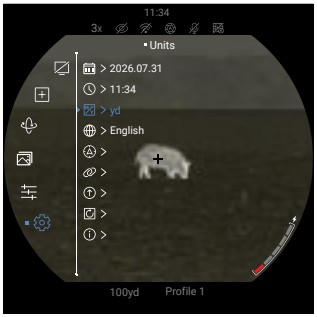
1. In the settings submenu, rotate the **Control Turret** to select **Time**.
2. Short press the **Menu** Ⓜ **button** to edit the time, displayed in HH:MM, in 24-hour format. A blue arrow will appear above and below the hour digit.
3. Rotate the **Control Turret** to select the correct value for each digit (hour and minute).
4. Short press the **Menu** Ⓜ **button** to switch between digits. The two arrows move to indicate the selected digit.
5. Long press the **Menu** Ⓜ **button** to save the time and return to the home screen. The set time appears in the status bar.



SETTINGS > UNITS

Set the units of measurement

1. In the settings submenu, rotate the **Control Turret** to select **Units**.
2. Short press the **Menu** Ⓜ **button** to enter the submenu.
3. Rotate the **Control Turret** to move through the options: m (meters) and yd (yards).



4. Long press the **Menu Ⓜ button** to confirm the selection and return to the home screen.

SETTINGS > LANGUAGES

Select the language



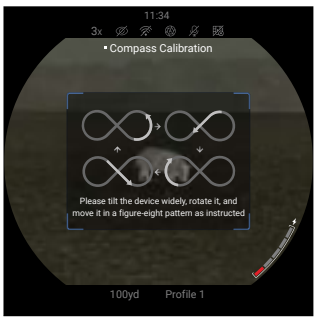
1. In the settings submenu, rotate the **Control Turret** to select **Languages**.
2. Short press the **Menu Ⓜ button** to enter the submenu.
3. Rotate the **Control Turret** to move through the language options.
4. Long press the **Menu Ⓜ button** to confirm the selection and return to the home screen.

SETTINGS > COMPASS CALIBRATION

Calibrate the compass



1. In the settings submenu, rotate the **Control Turret** to select **Compass Calibration**.
2. Short press the **Menu Ⓜ button** to begin the compass calibration.
3. Follow the onscreen prompts to complete the calibration.
4. Long press the **Menu Ⓜ button** to confirm the selection and return to the home screen.

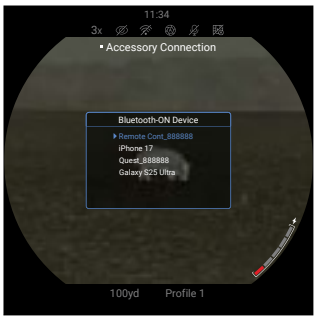


SETTINGS > ACCESSORY CONNECTION

Pair the ACE 2 and the optional Bluetooth remote (not included; sold separately)



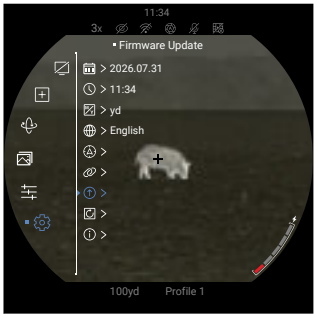
1. Long press the **Power button** on the remote control for 2 seconds to turn it on. The LED indicator on the remote will begin flashing.
2. In the settings submenu, rotate the **Control Turret** to select **Accessory Connection**.
3. Short press the **Menu Ⓜ button** to enter the pairing interface.



4. Rotate the **Control Turret** to move to the bluetooth remote control, and short press the **Menu Ⓜ button** to begin pairing.
   a. When successfully paired, a blue checkmark appears next to the device name, and the LED on the remote will stop flashing for 5 seconds and turn off.
   b. Once the ACE 2 and remote have been paired, they will automatically connect when the remote is powered on.
   c. If the ACE 2 and the remote cannot be paired within 3 minutes, the remote will automatically turn off.
5. Long press the **Menu Ⓜ button** to return to the previous menu.

SETTINGS > FIRMWARE UPDATE

Update the firmware

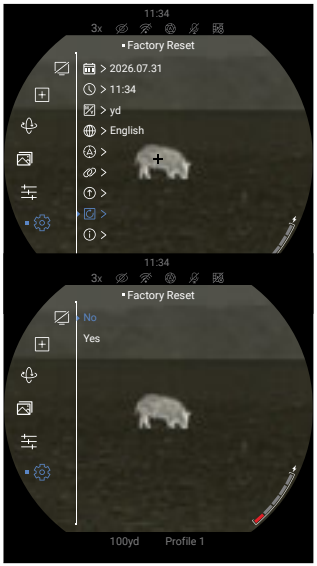


1. In the settings submenu, rotate the **Control Turret** to select **Firmware Update**.
2. Short press the **Menu Ⓜ button** to check for a manufacturer-provided specific update file saved to the internal storage.

NOTE: A firmware update can also be performed in the Nocpix App.

SETTINGS > FACTORY RESET

Restore factory default settings



1. In the settings submenu, rotate the **Control Turret** to select **Factory Reset**.
2. Short press the **Menu button** to enter the factory reset submenu.
3. Short press the **Menu button** to select **No** to confirm cancellation of the factory reset and return to the submenu; **OR**
4. Rotate the **Control Turret** to move to **Yes** and short press the **Menu button** to select it to confirm the factory reset. The screen will go dark, and the factory reset will begin after a brief pause. The ACE 2 will reboot automatically.

NOTE: A factory reset cannot be undone.

SETTINGS > INFO

Show device information



1. In the settings submenu, rotate the **Control Turret** to select **Info**.
2. Short press the **Menu button** to display information about the ACE 2 Series: the model number, the boot, software, and hardware versions, the part and serial numbers, and the FCC ID.
3. Long press the **Menu button** to return to the home screen.

18. Basic Inspection

It is recommended to carry out a technical inspection before each use. Please check the following:

- The imager appearance: there should be no cracks in the body or visible damage.
- The condition of the lens and eyepiece: there should be no cracks, greasy spots, dirt, or other deposits on the lens.
- The rechargeable battery should be fully charged.
- The control buttons should be in working order.

19. Basic Maintenance

Always close the objective lens cap after use to avoid damaging or scratching the lens. Never touch the lens directly; oil from your skin can damage the lens coating and surface.

Basic maintenance should be carried out at least twice a year and includes the following steps:

- Wipe the surface of the external metal and plastic components with a clean, dry cotton cloth. Do not use chemical, corrosive, or abrasive cleaners. Canned air may also be used to clean the external components.
- Clean the electric contacts and battery slots on the imager using a non-greasy organic solvent.
- Check the lens and eyepiece. Remove dirt or sand from the optics using a non-contact cleaning method.
- Only clean the exterior of the lens with a microfiber lens cloth or a similar product. Only clean when the lens is visibly soiled; frequent cleaning can degrade the anti-reflective lens coating.

20. FCC Statement

FCC ID: 2BHFB-ACE2-04

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.

CAUTION: Changes or modifications not expressly approved by IRayUSA 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.

This device was tested for typical body-supported operations and use. To comply with RF exposure requirements, a minimum separation distance of 0.5cm must be maintained between the user's body and the handset, including the antenna. Third-party belt-clips, holsters, and similar accessories used by this device should not contain any metallic components. Body accessories that do not meet these requirements may not comply with RF exposure requirements and should be avoided. Use only the supplied or an approved antenna.

21. Warranty

At iRayUSA, we're first and foremost hunters and users of our products, and we understand that failure isn't an option. We also understand that having to wait extended periods for repair isn't something that a customer should have to put up with when something does go wrong. During your published warranty period, iRayUSA will repair or replace, at its discretion, any optic that becomes defective during normal use. Additionally, if we cannot fix your optic in less than one week, we will offer to replace it with a replacement product in like or better condition. If you would rather wait for your specific optic to be repaired, we can handle that too.

We know you've never seen this from a thermal manufacturer, and neither have we; that's why we started iRayUSA.

Our warranty follows the product and is not tied to the original owner. The warranty period is tied to the date of sale to the dealer. This warranty only covers normal use and does not cover cosmetic damage, normal wear, intentional damage, theft, loss, any act of God, or a condition caused by use other than intended. Any product that is modified, opened, or tampered with will void any warranty coverage. Any serial number damage or alteration on the product will be considered a modification. Be sure to register your ACE 2 Series thermal imaging rangefinder at irayusa.com/register.

To return a product for repair:

1. Go to irayusa.com/warranty and click the **Request an RMA button** to request an RMA number. Returns will not be accepted without an RMA.
2. The customer is responsible for shipping the product to iRayUSA, per the instructions included with the RMA. iRayUSA will return the product at no cost.

WARRANTY NOTES:

- The one-week timeline starts from the time of receipt of the product at iRayUSA.
- iRayUSA is not liable for any damages or loss incurred when shipping to iRayUSA.
- This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Please give us a call at **800-769-7125**, visit irayusa.com/warranty, or email info@irayusa.com with any questions.

22. General Troubleshooting

The troubleshooting table on the next page lists issues that may occur when operating the ACE 2 Series. Carry out the recommended troubleshooting steps in the order shown in the table. Please contact iRayUSA at 800-769-7125 or irayusa.com/support or an authorized vendor for assistance before attempting to perform any modifications or repairs beyond the scope of the troubleshooting procedures in this manual. Unauthorized repairs or modifications will void your warranty.

ISSUE	POSSIBLE CAUSES	TROUBLESHOOTING STEPS
The ACE 2 Series will not turn on.	The battery is very low or has completely discharged.	Charge the battery.
The ACE 2 Series can not connect to a computer or external power supply.	External power supply has completely discharged.	Check the external power supply and charge it if necessary.
	Computer is turned off.	Power on the computer.
	USB-C cable is damaged.	Replace the cable.
The ACE 2 Series can not connect to the mobile device (smartphone or tablet).	Wi-Fi is not turned on.	Turn on the Wi-Fi in the main menu. See **Main Menu > Wi-Fi** on page 32.
	Wrong Wi-Fi password entered.	On the mobile device, go to **Settings > Wi-Fi** and enter the correct password. The default password is 12345678. See **Main Menu > Wi-Fi** on page 32.
	Too many Wi-Fi signals nearby, which may cause interference.	Move the ACE 2 Series and mobile device to an area with no or fewer Wi-Fi signals.
Wi-Fi signal is lost or interrupted.	The device is out of range of a strong Wi-Fi signal, or there are obstacles (such as concrete walls) between the device and the signal.	• Try again when the Wi-Fi signal is stable. • Move the ACE 2 Series closer to the Wi-Fi signal.
The image is blurry, the background is uneven, or vertical lines or artifacts are present.	Non-uniformity correction is required.	Perform a non-uniformity correction. See **Non-uniformity Correction** on page 21.
The image is too dark.	Image brightness level is too low.	Adjust the image brightness in the quick menu. See **Using the Quick Menu** on page 18.
The GUI is clear, but the image is blurry.	The lens is not focused.	• Adjust the focus on the target by rotating the objective focus ring **(4)**. • Adjust the image sharpness in the quick menu. See **Using the Quick Menu** on page 18.
	There is dust or ice on the interior or exterior optical surfaces of the lens.	• Wipe the external optical surface with the included microfiber lens cloth.
	There is condensation on the interior or exterior optical surfaces of the lens.	• Wipe the external optical surface with the included microfiber lens cloth. • Allow the ACE 2 Series to dry by leaving it in a warm, dry environment for at least 4 hours.
The image of the object being observed is missing.	Looking through glass.	Remove any glass windows from the field of view.
The ACE 2 Series will not focus.	Image settings are not optimal for the current environmental conditions or the object being observed.	• Check the external surface of the objective lens and eyepiece and, where necessary, wipe away any dust, condensation, frost, etc. • In cold weather, you can use special anti-fogging coatings, such as those made for corrective glasses. • Adjust the focus on the target by rotating the objective focus ring **(4)**. • Adjust the image sharpness in the quick menu. See **Using the Quick Menu** on page 18. • Adjust the image and device settings. See **Quick Start Guide** on page 8. • Turn on Ultra-Clear mode. See **Main Menu > Ultra-Clear** on page 29.
Image quality is too low or the detection range is reduced.	These issues may occur due to the weather conditions, such as snow, rain, humidity, and fog.	Turn on Ultra-Clear mode. See **Main Menu > Ultra-Clear** on page 29.
When the ACE 2 Series is used in low-temperature conditions, the image quality of the surroundings is worse than in warm-temperature conditions.	Environmental conditions.	In warm-temperature conditions, objects being observed (surroundings and background) heat up differently because of thermal conductivity, thereby generating a high-temperature contrast. Accordingly, image quality produced by the imager will be higher. In low-temperature conditions, the background will cool down to roughly the same temperature, and thus the temperature contrast is substantially reduced and image detail can go down as there is less contrast in the scene. This is a normal function of a thermal imager and is no indicator of actual detector performance.

Nocpix

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A26H25CT

Specifications are subject to change without notice. For the most up-to-date specs, go to irayusa.com. Not responsible for typographical errors. Ver 1.0.