

# User's Manual

INFIRAY OUTDOOR

# BOLT SE SERIES

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**Compact Bolt-Action Optimized Thermal Optic**



## WARNING! 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](http://irayusa.com/ITAR).

### FCC ID 2AYGT-2D-00

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.

### 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.

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# 1. OVERVIEW

The InfiRay Outdoor BOLT SE is built on the success of previous BOLT models with a focus on simplicity and ease of use. Designed with users of traditional rifle scopes in mind, the BOLT SE offers a familiar profile and tactile controls. InfiRay’s industry-leading 12 μm 384×288 Micro II sensor, paired with a 1536×1080 AMOLED display provides exceptional clarity across all zoom levels. The scope’s magnification can be quickly adjusted via an intuitive zoom ring. Hunters can appreciate the ability to use common mounting systems or the included 30 mm rings to mount on bolt-action rifles or other platforms. An internal battery with USB-C charging eliminates the need to change batteries during a hunt. Photo and video recording with 32 GB of internal storage and mobile app connectivity with wireless streaming allow users to share their experiences with friends and family.

# 2. FEATURES

- 12 μm iRay Micro II thermal sensor
- <25 mK NETD sensor sensitivity
- 0.43-inch AMOLED display with ultra-high 1536×1080 resolution
- Aluminum alloy housing
- 1375-yard detection range
- Digital zoom from 1.0× to 4.0×
- Low power consumption and long battery life
- Multiple zero profiles and ranges
- Traditional 30 mm diameter housing design
- High frame frequency: 50hz
- Compatible with ILR-1200-1 Bluetooth Laser Rangefinder Module (optional/not included)
- Built-in 32 GB storage to support image capture and video recording
- Built-in Wi-Fi module
- Mobile device App compatible
- Built-in digital compass and gravity sensor
- Multiple reticle types and color options
- Ultra-clear mode for advanced image detail
- Picture in Picture (PIP)
- Defective pixel correction
- Extended eye relief
- User-friendly interface

# 3. TECH SPECS

BOLT SE		TL25 SE	TL35 SE
SENSOR			
Resolution	384×288		
Pixel Size	12 μm		
Frame Rate	50hz		
Sensor Sensitivity	<25 mK		
Image Processing	MATRIX III		
Core	InfiRay Micro II		
OPTICS			
Objective Lens	25 mm f/1.0	35 mm f/0.9	
Magnification	2.0×	3.0×	
Digital Zoom	4×	3.0×	
Field of View	10.5° × 7.9°	7.5° × 5.7°	
Detection Range	1375 Yards	1750 Yards	
Display Type	0.43-inch AMOLED		
Display Resolution	1536×1080		
Color Palettes	White Hot, Black Hot, Red Hot, Color, Highlight		
Reticle Types	6 (1 Dynamic, 5 Static)		
Reticle Colors	Black, White, Red, Green		
Mounting System	30 mm Rings		
P.I.P	Yes		
Rangefinder	Bluetooth ILR-1200-1 LRF (Optional/Not Included)		
Eye Relief	50 mm		
Diopter Range	-5 to +4		
ELECTRONICS			
Onboard Recording	Video, Recoil-Activated Video, and Image		
Onboard Storage	32 GB		
Wireless Connectivity	Video and Image via App		
Data/Power Connector	USB-C		
Power Supply	USB-C External, Built-In Battery Pack (8+ Hours)		
Start Up Time	<10 Seconds, Instant from Standby		
PHYSICAL			
Size	12.20" × 2.76" × 2.76"		
Weight	25.40 Oz		
ENVIRONMENTAL/WARRANTY			
Warranty	5 Years		
Housing Material	Aluminum Alloy		
Ingress Protection	IP67		
Operation Temperature	-4°F ~ 122°F		
Max. Recoil	1000 g/s <sup>2</sup> (300 Win./7mm Mag)		

## 4. ACCESSORIES

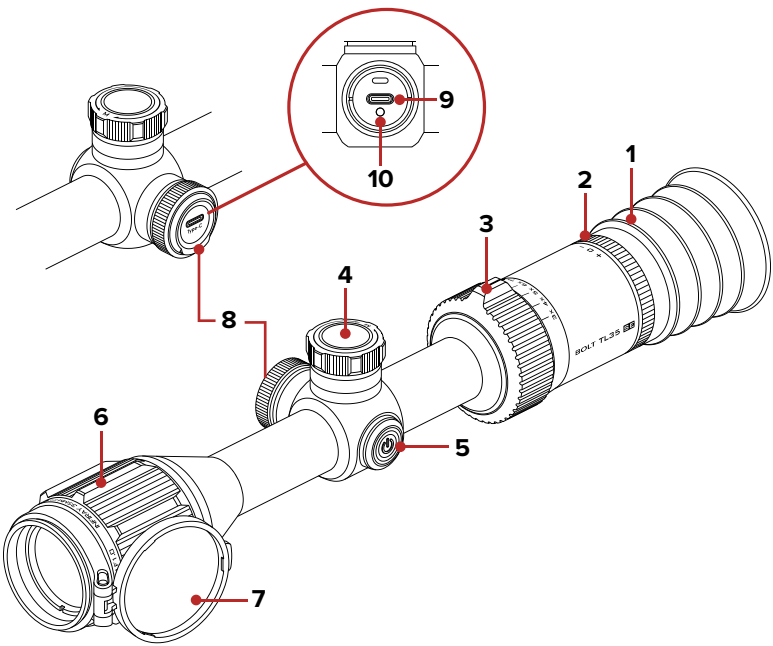
The BOLT SE ships with everything you need to get out and hunt. The included items are as follows:

- BOLT SE Thermal Imaging Rifle Scope
- Objective lens cap
- Eyeguard
- 30 mm ring mounts for Picatinny rail
- USB-C cable for data/video
- USB power adapter
- Lens cloth
- Soft case
- Thermal Sight-in Targets
- User manual




Optional accessories, such as the IRAY-AC96 ILR-1200-1 Bluetooth Laser Rangefinder Module, as well as various replacement accessories, including cables and factory mounts, are available for purchase. Contact 800-769-7125 or [irayusa.com/support](http://irayusa.com/support).


## 5. COMPONENTS AND CONTROLS



- 1 Eyeguard
- 2 Eyepiece Diopter Adjustment Ring
- 3 Zoom Ring
- 4 Tactile Control Turret
- 5 Power Button
- 6 Objective Lens Focus Ring
- 7 Objective Lens Cap
- 8 Rubber USB-C Port Cover
- 9 USB-C Port
- 10 LED Status Indicator

6. 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	Perform a non-uniformity correction	Power off the device; enter standby mode
In standby mode	Exit standby mode	---
Main menu	Return to previous menu without saving changes	---
Defective pixel correction interface	Add or remove defective pixel from the "to be corrected" list	---
Reticle zeroing interface	Exit interface and return the reticle to the last saved zero position	---

Power  + Control Turret		
Current Screen / Menu	Short Press	Long Press
Home screen		Activate / deactivate the reticle (Long press for at least 5 seconds)
Reticle zeroing interface	---	Freeze image to keep reticle centered on aiming point; press again to clear frozen image

Zoom Ring			
Current Screen / Menu	Short Press	Long Press	Rotate
---	---	---	Adjust digital zoom level  Clockwise: Zoom In  Counterclockwise: Zoom Out

Control Turret			
Current Screen / Menu	Short Press	Long Press	Rotate
Home screen	Once: Enter the quick menu	Enter the main menu	Clockwise: Adjust the color palette
	Twice: Take a photo		Counterclockwise: Adjust the image brightness
Quick menu	Adjust parameters for a menu item	Return to home screen	Clockwise: Move left / down  Counterclockwise: Move right / up
Main menu	Confirm changes; open the submenu	Save changes and return to the home screen	
Reticle zero interface	Switch between X and Y	Save changes and return to home screen	
Defective pixel correction interface	Switch between X and Y	Save changes and return to the home screen	Switch menu options; move menu cursor; move reticle position

**NOTE:** Consult the manual that comes with your ILR-1200-1 Laser Rangefinder Module (optional/not included) for rangefinder shortcuts.

## 7. QUICK START GUIDE

### Step 1: Prepare to Use the BOLT SE

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, as needed.
3. Charge the built-in battery pack before using the BOLT SE for the first time. See **Charging the Built-in Battery Pack** on page 10.
4. Install the eyeguard (1).
5. Mount the BOLT SE to the weapon using the included 30 mm rings. See **Mounting the BOLT SE** on page 12.

### Step 2: Turn On the BOLT SE

1. Open the objective lens cap (7).
2. Long press the **Power** (⏻) **Button** for 2 seconds to power on the BOLT SE. The InfiRay logo will appear.
3. Rotate the diopter adjustment ring (2) of the eyepiece until the interface icons are clear.
4. Rotate the objective lens focus ring (6) to focus on the object being observed.

**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 Quick Menu Settings

1. The reticle may be inactive when the BOLT SE is powered on for the first time. From the home screen, press and hold the **Control Turret** and the **Power** (⏻) **Button** at the same time until the reticle appears.
2. From the home screen, short press the **Control Turret** to enter the quick menu (see **Using the Quick Menu** on page 16) to:
  - a. Select a reticle type from 1–6.
  - b. Set the reticle color to white, black, red, or green.
  - c. Set the display brightness level from 1–5.
  - d. Set the image sharpness level from 1–5.

### Step 4: Adjust Image and Device Settings

From the home screen:

1. Rotate the **Control Turret** clockwise to set the color palette to white hot, black hot, red hot, highlight, or color.
2. Short press the **Power** (⏻) **Button** to perform a non-uniformity correction. See **Non-Uniformity Correction (NUC)** on page 20.
3. Twist the zoom ring (3) to zoom in and out on the observed object.
4. Long press the **Control Turret** to enter the main menu to adjust the following settings (see **Main Menu Options and Descriptions** on page 25):
  - a. To turn on the PIP window.
  - b. Turn on Ultra-clear mode to enhance the image contrast in inclement weather.
  - c. Turn on recoil activated video.
  - d. Turn on the gravity sensor and digital compass.
  - e. Change the non-uniformity correction (NUC) mode to automatic, manual, or background.
  - f. Calibrate the digital compass.
  - g. Set the date and time.
  - h. Set the units of measurement to meters or yards.

### Step 5: Zero the BOLT SE

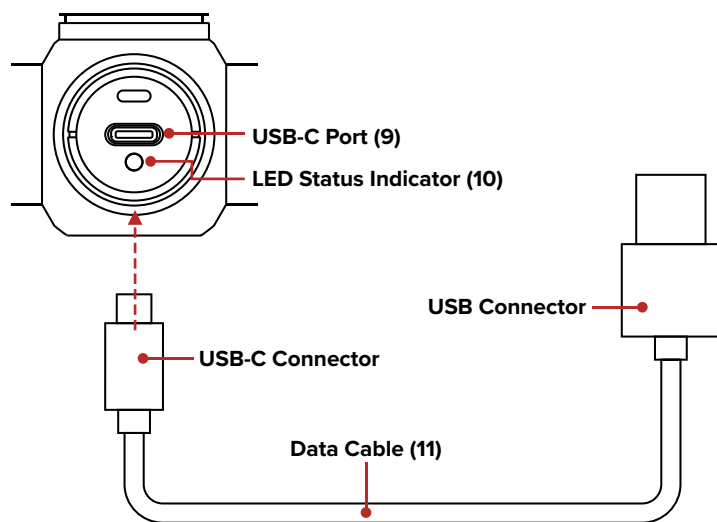
1. Zero the rifle scope following the instructions in **Zeroing the BOLT SE** on page 19.
  - a. Set the zeroing profile to A, B, or C. See **Main Menu > Zeroing Profile** on page 29.
  - b. Select, or customize, a preset zero distance that matches the target distance. See **Reset Zeroing Distance Menu > Zero Distance** on page 30.
  - c. Zero the reticle. See **Reset Zeroing Distance Menu > Reticle Zeroing** on page 31.

## 8. CHARGING THE BUILT-IN BATTERY PACK

The BOLT SE has a built-in rechargeable li-ion battery which supports a run-time of 8+ hours. The built-in battery pack is not removable or replaceable. Please ensure the battery pack is fully charged before the first use.

To charge the battery pack:


1. Remove the rubber USB-C port cover.
2. Connect the smaller USB-C end of the data cable (11) to the USB-C port (9).
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. The included 5V–2A USB power adapter and plug the power adapter into an electrical outlet.
4. While charging, the LED status indicator (10) below the USB-C port will turn red. When the indicator LED turns green, the battery is fully charged. Do not overcharge.




5. When fully charged, disconnect the data cable from the USB-C port and replace the USB-C port cover.

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

### NOTES:

- You may charge and operate the BOLT SE at the same time.
- When the battery status icon in the status bar becomes the low battery  icon, charge the battery right away to avoid over-discharge and a reduction in battery capacity or service life.

- When the built-in battery pack is charging, the battery status icon is replaced by the charging  icon.
- See **Battery Status** on page 16 for additional battery information.

## 9. BATTERY SAFETY PRECAUTIONS

**WARNING:** Only use the data cable provided in the kit to charge the built-in battery pack. Only charge the BOLT SE with a standard USB adapter (5V–2A), as included in the BOLT SE kit. Using any other types of adapters may lead to irreversible damage to the battery, adapter, or rifle scope. This damage is not covered under warranty.

### WARNINGS:

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

To maintain optimal battery capacity and service life:


- Avoid storing a fully charged or discharged battery for long periods. Partially charging the battery is necessary if the battery will be stored for an extended period.
- If your BOLT SE has been stored for an extended period, it should be charged before initial use.
- Do not charge an extremely cold battery without bringing it into a warm environment. Let the battery warm up for 45 minutes before charging.
- Charge the battery at a temperature range from 30°F to 100°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 battery pack above the maximum or below the minimum recommended temperature range as this may decrease the battery pack capacity or service life.



## 10. EXTERNAL POWER SUPPLY

The BOLT SE supports the use of a 5V external power supply, such as a power bank for a mobile phone.

To connect the BOLT SE to an external power supply:

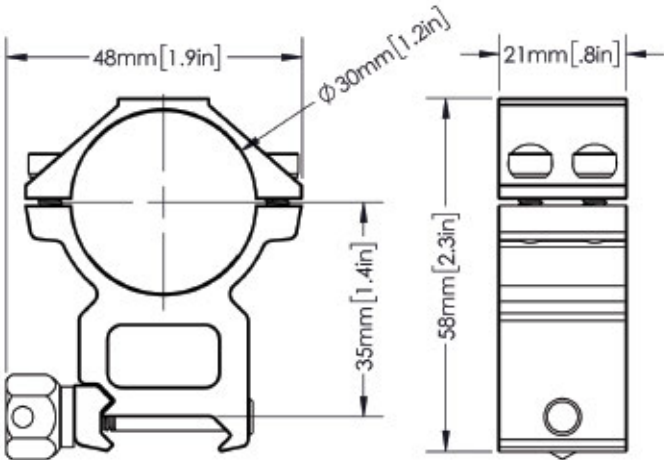
1. Remove the rubber USB-C port cover (8).
2. Connect the smaller USB-C end of the data cable to the USB-C port (9).
3. Connect the larger USB end of the data cable to the external power supply. The BOLT SE will automatically switch to using the external power supply for power and it will begin charging the internal battery pack.
4. The battery status icon in the status bar will change to a charging battery  icon, with the battery color and fill level indicating the current charge level. See **Battery Status** on page 16 for additional information.
5. If the external power supply is disconnected, the BOLT SE will automatically switch to the built-in battery without powering off.

**NOTE:** Do not connect the BOLT SE to an external device with a power supply that exceeds the 3.0 USB cable.

## 11. MOUNTING THE BOLT SE

To ensure accurate results, please first properly mount the BOLT SE on your rifle.

The BOLT SE rifle scope is mounted using traditional 30mm ring mounts, such as the ring mounts included in the package. Follow the ring manufacturer’s installation instructions and torque the ring caps to 20 in/lbs. Cross-bolts should be hand-tightened until firm; do not over-tighten. A torque driver is required to control the torque.



### MOUNTING NOTES:

- When mounting the BOLT SE on a rifle, adjust its position so that proper eye relief (50 mm) is achieved. Failure to comply with this recommendation may result in injury to the shooter by the eyepiece when shooting.
- It is recommended to install the BOLT SE as low as possible for a proper cheek weld; however, make sure to avoid contact with the barrel or receiver.
- After mounting, but before hunting with the BOLT SE, zero the rifle scope. See **Zeroing the BOLT SE** on page 19 for instructions.

## 12. OPERATING INSTRUCTIONS

### WARNING!


Don't point the objective lens towards any 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 Features

The BOLT SE is operated via one control button and a large metal tactile control turret. The large, easy-to-find control turret provides audible and tactile feedback when twisted or pressed.

The control buttons 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 (7).
2. Long press the **Power**  **Button** for 2 seconds to power on the BOLT SE.



To determine the current charge of the built-in battery pack, check the battery status icon on the right side of the status bar. See **Battery Status** on page 16 .

### Powering Off and Entering Standby Mode

To power off the BOLT SE:

1. Long press the **Power**  **Button**. The shutdown screen will open, showing a 3-second countdown.
2. Continue holding the **Power**  **Button** until the 3-second countdown completes.
3. “Data saving...” appears on the screen and the BOLT SE will shut down automatically after the data finishes saving.






**NOTE:** Releasing the **Power**  **Button** at any time before the countdown reaches zero will stop the shutdown process and the rifle scope will enter standby mode. Short press the **Power**  **Button** to exit standby.

**WARNING:** If using an external power supply, do not disconnect the power supply when saving data, otherwise the data may not be saved.


## Manually Entering Standby Mode

The user may enter standby mode manually at any time.

- To enter standby from the home screen:
  - Long press the **Power**  **Button** to bring up the shutdown screen.
  - Release the **Power**  **Button** before the 3-second countdown finishes to enter standby.
- Short press the **Power**  **Button** to exit standby.

## Setting the BOLT SE to Enter Standby Mode Automatically

The rifle scope may be set to automatically enter standby mode after a specified length of inactivity.

- In the main menu, set the standby time to 2, 4, or 6 minutes. Once set, the BOLT SE will automatically enter standby according to the set time.
- Short press the **Power**  **Button** to exit standby.

### NOTES:

- When **2min**, **4min**, or **6min** is selected:
  - The BOLT SE 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°.
  - The BOLT SE will not enter standby mode while it is in a level firing position.
- When **off** is selected, auto standby is turned off and the rifle scope will operate until the batteries run out.
- See **Main Menu > Standby** on page 33 for instructions.

## Adjusting the Focus

### ADJUSTING THE DIOPTER/EYEPIECE

- Rotate the eyepiece diopter adjustment ring **(2)** at the rear of the rifle scope right or left until the user interface is clear.
- Look closely to ensure all icons, the status bar, and the reticle appear sharp and in focus.

### NOTES:

- After this initial adjustment, there is no need to rotate the eyepiece adjustment ring **(2)** for long distances or any other conditions.
- If necessary during standard use, you may rotate the objective lens focus ring **(6)** 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:

- Rotate the objective lens focus ring **(6)** left or right to focus on the target object being observed.

**NOTE:** Re-adjusting the focus will be needed if the distance to your target changes.

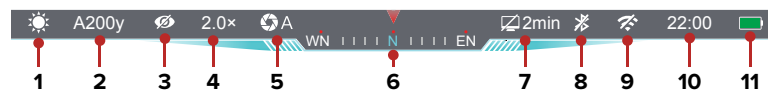
## Activating / Deactivating the Reticle










The reticle may be inactive when the BOLT SE is powered on for the first time. To activate the reticle, or to deactivate it at a later time:







- From the home screen, press and hold the **Control Turret** and the **Power**  **Button** at the same time until the reticle appears.

## Status Bar Overview

The status bar shows information on the operating status of the BOLT SE:







- Color Palette:** Shows the set color palette, white hot , black hot , red hot , color , or highlight .
- Zeroing Profile & Distance:** Shows the selected zero profile, A, B, or C, and the zero distance.
- Ultra-clear Mode:** Shows the Ultra-clear status, on  or off .
- Total Magnification:** Shows the real-time amplification, 1.0–8.0×.
- Non-Uniformity Correction (NUC) Mode:** Shows the non-uniformity correction (NUC)  icon and selected mode, automatic **(A)**, manual **(M)**, and background **(B)**.
- Digital Compass:** Displays, along with the gravity sensor scales on either side of the screen, when the gravity sensor is turned on in the main menu.
- Standby:** Shows the standby  icon and status, 2min, 4min, 6min, or off.

- 8 **Bluetooth:** Shows the Bluetooth status,  (off),  (on and successfully connected to the ILR-1200-1 Bluetooth Laser Rangefinder; optional/not included), or  (on but not connected to the laser rangefinder). The vertical battery icon  indicates the current battery level of the laser rangefinder module.
- 9 **Wi-Fi:** Shows the Wi-Fi status, on  or off .
- 10 **Time:** Shows the current time in 24-hour format.
- 11 **Battery Status Indicator:** Shows the battery status of the built-in battery pack.

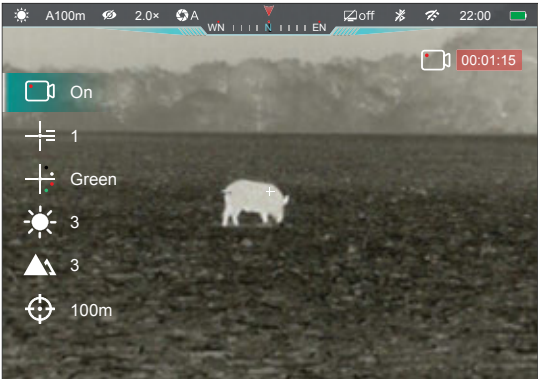
BATTERY STATUS

Battery icon color and fill level indicate the current battery status. The battery icon is replaced by the charging battery icon when an external power supply is connected.







COLOR / ICON	BATTERY STATUS
Green Battery 	21% – 100%
Yellow Battery 	10% – 20%
Red Battery 	<10%; charge the battery pack right away.
Charging Battery 	The battery pack is charging; an external power supply or computer is connected via the data cable

Using the Quick Menu

In the quick menu, video recording may be turned on and off, and reticle type and color, display brightness, image sharpness, and zeroing distance may be quickly adjusted.

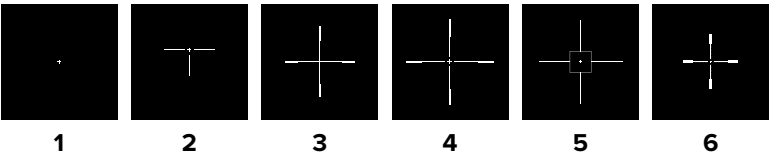


- From the home screen, short press the **Control Turret** to enter the quick menu.
- Rotate the **Control Turret** to switch between the quick menu items, described on the next page. The selected menu item is back highlighted in blue.

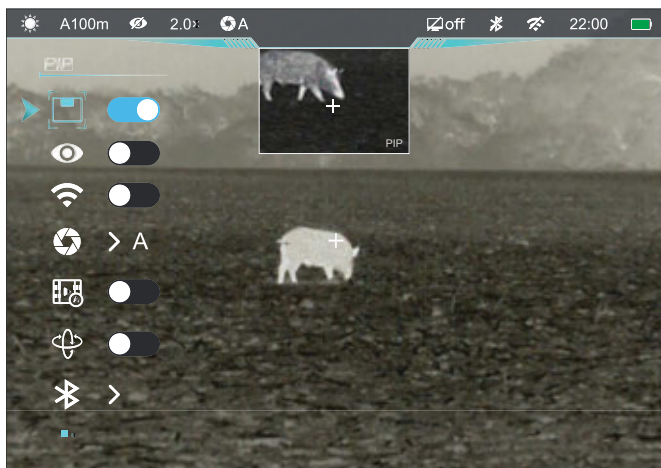
-  (**Video Recording**): Short press the **Control Turret** to turn video recording on and off.
-  (**Reticle Type**): Short press the **Control Turret** to change reticle type, from 1–6. The reticle changes as the cursor moves through the reticle types. See **Reticle Types** below.
-  (**Reticle Color**): Short press the **Control Turret** to change the reticle color between white, black, red, and green. The reticle changes as the cursor moves through the color options.
-  (**Display Brightness**): Short press the **Control Turret** to change the display brightness level, from 1–5.
-  (**Image Sharpness**): Short press the **Control Turret** to change the image sharpness level, from 1–5.
-  (**Zeroing Distance**): Short press the **Control Turret** to change the selected zeroing distance within the currently selected zeroing profile. Only the zero distances in the selected profile will be available for selection. The selected zero profile and distance appear on the left side of the status bar.
- Long press the **Control Turret** to save changes and exit the quick menu.


**NOTE:** After 5 seconds of inactivity, the quick menu will close automatically, saving any changes made.

Reticle Types





## Navigating the Main Menu



- From the home screen, press and hold the **Control Turret** to enter the main menu.
- The cursor position in the main menu is marked by a blue arrow icon.
- Menu icons and text turn blue in the main menu and all submenus to indicate the current selection.
- Use the **Control Turret** to navigate the menu:
  - **Rotate** to move up and down through the menu.
  - **Short press** to change the current parameters for the selected menu option, enter the submenu, or confirm submenu changes.
  - **Long press** to save any changes and return to the home screen.
- Short press the **Power**  **Button** to return to the previous menu without saving.
- After 15 seconds of inactivity, the menu will automatically close and the interface will return to the home screen. Changes are not saved automatically (except changes to toggle on / off menu items, such as Ultra-clear and Wi-Fi).
- Upon exiting from the main menu, the cursor location is stored for a single working session (until the BOLT SE is turned off). After restarting the BOLT SE and entering the menu, the cursor position will be at the first menu item.

## 13. ZEROING THE BOLT SE

BOLT SE features a “freeze” zeroing method. To zero the BOLT SE:

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 the zeroing profile, A, B, or C. See **Main Menu > Zeroing Profile** on page 29.
5. Based on the distance to the target you wish to zero, select a preset zero distance, OR customize one of the preset zero distances to match. The BOLT SE supports custom zeroing distances of 1 to 999 meters or 1 to 999 yards. See **Reset Zeroing Distance Menu** on page 30.
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. See **Reset Zeroing Distance Menu > Reticle Zeroing** on page 31.
10. In the submenu for the selected zero distance, center the reticle on the aiming point and long press the **Control Turret** and **Power**  **Button** at the same time to freeze the image. The image freeze  icon will appear below the X/Y coordinates.
11. Select the axis (X or Y) along which to move the reticle by short pressing the **Control Turret** to toggle between X and Y.
12. Adjust the X/Y position of the reticle until the reticle matches the point of impact.
  - 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. Upon moving the reticle, a white dot appears onscreen, representing the original position of the reticle.
13. Long press the **Control Turret** to save the reticle position.
14. 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, please see **Reset Zeroing Distance Menu > Reticle Zeroing** on page 31.

# 14. 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 BOLT SE is powered on.

The BOLT SE has three NUC modes, automatic (A), manual (M), and background (B). The selected NUC mode (A, M, or B) appears on the left side of the status bar. For instructions on setting the NUC mode in the main menu, see **Main Menu > Calibration** on page 27.

## Automatic Mode

In automatic mode (A), the BOLT SE will perform a NUC automatically according to the internal software algorithm. There is no need to close the objective lens cap (7) as the BOLT SE’s internal shutter covers the sensor.

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

## Manual Mode

In manual mode (M), 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 (7) during a manual NUC, as the internal shutter covers the sensor.

To perform a manual NUC while in manual mode (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 (B), 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 (7).

To perform a background NUC while in background mode:

1. Close the objective lens cap (7).
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.

# 15. PHOTOGRAPHY AND VIDEO RECORDING

The BOLT SE is equipped with video recording and image capture. All videos and photos are automatically saved on the internal 32 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 Menu > Date** and **Settings Menu > Time** on page 38. Alternatively, the date and time may be synchronized in the InfiRay Outdoor App.

## Photography

To take a photo:

1. From the home screen, double-click the **Control Turret**.
2. The image will freeze for 0.5 seconds and the camera (📷) icon will appear briefly in the upper-left corner of the screen.



**NOTE:** A red warning icon (⚠️) appears next to the camera icon in the upper-left corner of the screen when insufficient memory storage 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. From the home screen, short press the **Control Turret** to enter the quick menu.
2. Short press the **Control Turret** to select the video (📹) menu item and start a video recording.
3. When the video recording starts, the video (📹) icon and the recording timer, in HH:MM:SS (hour, minute, second) format, appear in the upper-right corner of the screen.
4. When recording, double-click the **Control Turret** to take a photo.
5. Reenter the quick menu and short press the **Control Turret** to select the video menu item again to stop the video recording.



## Recoil Activated Video Recording

When recoil activated video is turned on in the main menu, a video is automatically recorded when a shot is taken. The BOLT SE will automatically record 3 seconds before the shot and 2 minutes and 57 seconds after the shot.

The recoil activated video  icon and the recording timer will appear in the upper-right corner of the screen. See **Main Menu > Recoil Activated Video** on page 28 for instructions.



**NOTE:** When multiple shots are taken within the same three-minute period, only one video will be recorded.

## Video and Photography Notes

- You may enter and navigate the menu during video recording.
- Recorded photos are saved to the internal memory card.
  - Photos are saved in PIC\_HHMMSS.jpg format.
  - Videos are saved in VIDEO\_HHMMSS.mp4 format.
  - HHMMSS is hour, minute, second.
- The maximum duration of a recorded video file is 30 minutes. After this time, video recording will begin a new file automatically.
- The number of recorded files is limited only by the capacity of the internal memory.
- Check the available space of the internal storage card regularly and transfer video footage and images to other storage media to free up the memory card space.

## 16. ACCESSING THE INTERNAL MEMORY

When the BOLT SE 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 BOLT SE.
2. Connect the USB-C end of the data cable to the USB-C port (9).
3. Connect the other end of the data cable to your computer.

4. Double-click **My Computer** on the desktop of your computer.
5. Double-click to open the USB drive named **InfiRay**.
6. Double-click to open the folder named **InfiRay** to access the built-in memory.
  - a. The device shows the available space (in GB) remaining of the total memory storage.
  - b. Recorded photos and videos are separated by date into folders.
  - c. Folders are named by date, in YYYYMMDD (year, month, day) format.
7. Select the desired files or folders to copy or delete.

## 17. USING THE INFIRAY OUTDOOR APP

The BOLT SE can be operated using the InfiRay Outdoor App when the rifle scope is connected to a smartphone or tablet via Wi-Fi.



1. Download and install the App to your smartphone or tablet:
  - a. Scan one of the QR codes above to download the InfiRay Outdoor App from the App Store or Google Play; **OR**
  - b. Download the App for free via any app store.
2. Connect the BOLT SE to Wi-Fi:
  - a. In the main menu, turn on Wi-Fi. See **Main Menu > Wi-Fi** on page 27 for detailed instructions.
  - b. Open the App and press the **ViewFinder**  icon on the home screen.
  - c. Click the **Connect Device WiFi** button.
  - d. On the mobile device, go to **Settings > Wi-Fi**.
  - e. Select the BOLT SE from the list of Wi-Fi networks. It will appear in the list as "TLXX\_SE\_YYYYYY", where XX is the model number and YYYYYY is the six-digit device serial number.
  - f. Enter the Wi-Fi password and tap the **Join button**. The default password is 12345678.



3. Operate the BOLT SE 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, which are saved to the mobile device.
  - c. Change the Wi-Fi password and SSID.
  - d. Synchronize the date and time from the mobile device to the BOLT SE.
  - e. Update the BOLT SE firmware.

**NOTE:** When a factory reset is performed, the Wi-Fi password and SSID are reset to the defaults, 12345678 and TLXX\_SE\_YYYYYY. See **Settings Menu > Factory Reset** on page 40.

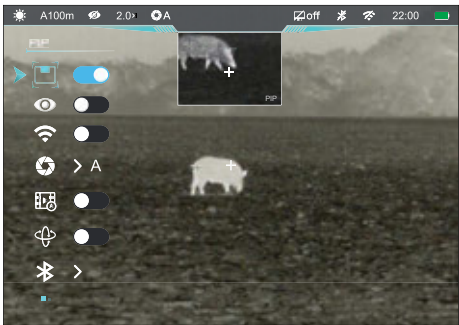
## 18. DIGITAL ZOOM

The BOLT SE uses stepped zoom and can quickly increase the base magnification from 2.0× to 8.0× by enlarging the image from 1 to 4 times digitally.

1. Twist the zoom ring **(3)** clockwise to zoom in and counterclockwise to zoom out on the observed object.
2. The real-time amplification number, 2.0–8.0×, appears on the left side of the status bar.

## 19. PICTURE IN PICTURE (PIP)

The PIP (Picture in Picture) function opens a small floating window with a magnified image-view at the top of the screen. PIP allows for improved aiming while still being able to see the wide field of view in the main body of the screen.



1. From the home screen, long press the **Control Turret** to enter the main menu to turn on PIP.
2. A 2× zoomed image, centered on the reticle, will appear at the top of the screen. Please note that the PIP image is 2× that of the total zoom shown on the left side of the status bar.
3. Return to the main menu to turn off PIP.

**NOTE:** When the image in the main body of the screen is magnified via digital zoom, the PIP image will enlarge accordingly.

## 20. BLUETOOTH LASER RANGEFINDER

The BOLT SE is compatible with the IRAY-AC96 ILR-1200-1 Bluetooth Laser Rangefinder Module (optional/not included). Please consult the documentation included with the ILR-1200-1 for information on its operation.

## 21. ULTRA-CLEAR MODE

Ultra-clear mode improves the image quality in inclement weather conditions, such as rain, fog, high humidity, or high temperatures as these conditions all result in lower thermal contrast. Ultra-clear mode enhances the NETD value of the thermal sensor and improves the sensor’s response rate to these challenging environmental conditions.

Ultra-clear mode provides:

- Improved image quality and clarity; images are crisper and sharper.
- Increased image detail.
- Improved recognition of observed targets.

See **Main Menu > Ultra-Clear** on the next page for instructions.

## 22. MAIN MENU OPTIONS AND DESCRIPTIONS


Menu and submenu options, from top to bottom are:

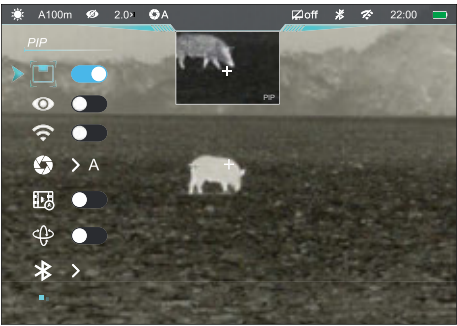
- **Main Menu:** PIP, Ultra-clear, Wi-Fi, Calibration, Recoil Activated Video, Gravity Sensor, Bluetooth, Zeroing Profile, Zeroing, Laser Calibration, Standby, Pixel Defect Correction, Compass Calibration, Settings.
- **Reset Zeroing Distance Menu:** The three preset zero distance options.
  - **Zero Distance Submenu:** Reticle Zeroing, Custom Zero Distance.
- **Settings Menu:** Date, Time, Language, Units of Measure, Status Bar, Factory Reset, Info.

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

## PIP




### Turn the Picture in Picture window on / off

1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to select the PIP  menu item.
3. Short press the **Control Turret** to toggle the PIP window on / off. When turned on, the PIP window appears at the top of the screen. The PIP window displays a 2× zoomed image, centered on the reticle.
4. Long press the **Control Turret** to save and return to the home screen.



## Ultra-clear

### Turn Ultra-clear mode on / off




1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to select the Ultra-clear  menu item. Ultra-clear is selected by default when the menu is accessed for the first time.
3. Short press the **Control Turret** to toggle Ultra-clear mode on / off. The Ultra-clear status, on  or off , appears in the status bar.
4. Long press the **Control Turret** to save and return to the home screen.

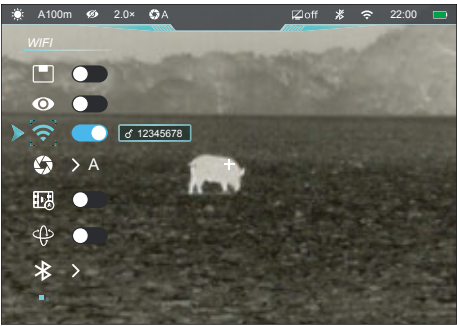


**NOTE:** When Ultra-clear mode is turned on and off, the BOLT SE will automatically perform a shuttered non-uniformity correction.

## Wi-Fi

### Turn Wi-Fi on / off

- Turn on Wi-Fi to manipulate the BOLT SE via the InfiRay Outdoor App.
1. Long press the **Control Turret** to enter the main menu.
  2. Rotate the **Control Turret** to select the Wi-Fi  menu item.
  3. Short press the **Control Turret** to toggle Wi-Fi on / off. The Wi-Fi status, on  or off , appears in the status bar
  4. Long press the **Control Turret** to save and return to the home screen.




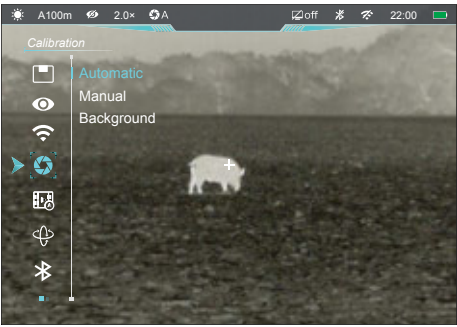
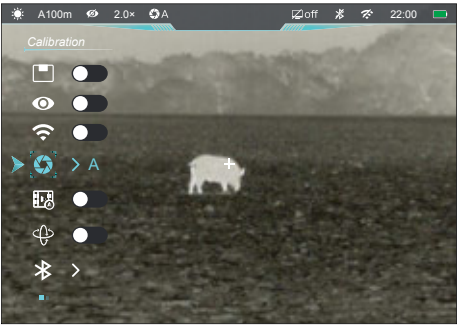
**NOTE:** The first three times Wi-Fi is turned on, the default password will appear for three seconds to the right of the Wi-Fi toggle. After the password is changed, it will not be displayed.

## Calibration

### Select non-uniformity correction mode

The BOLT SE has three non-uniformity correction (NUC) modes, Automatic (A), Manual (M), and Background (B).


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






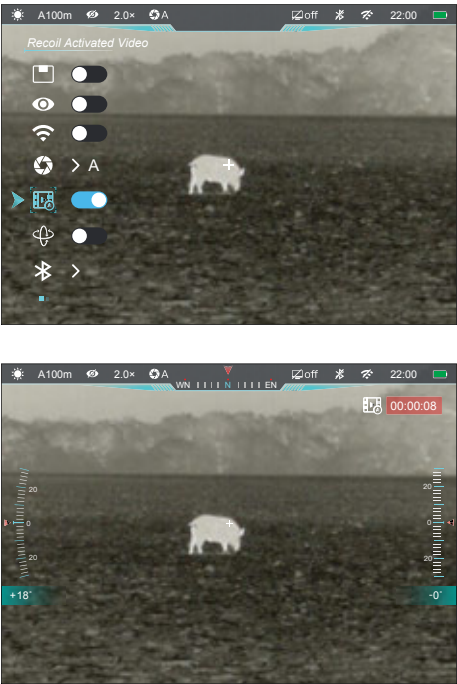
# Recoil Activated Video

## Turn recoil activated video on / off

1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to select the recoil activated video  menu item.
3. Short press the **Control Turret** to toggle the recoil activated video on / off.
4. Long press the **Control Turret** to save and return to the home screen.


### NOTES:

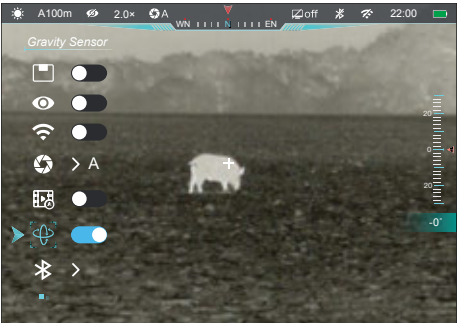
- When recoil activated video is on and a shot is taken, the BOLT SE will automatically record 3 seconds before the shot and 2 minutes and 57 seconds after the shot. The recoil activated video  icon and the recording timer will appear in the upper-right corner of the screen.
- When multiple shots are taken within the same three-minute period, only one video will be taken.
- The video recording is saved to the built-in memory storage.



# Gravity Sensor

## Turn the gravity sensor and digital compass on / off

1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to select the gravity sensor  menu item.
3. Short press the **Control Turret** to toggle the gravity sensor and digital compass on / off.
4. When turned on, the digital compass appears at the top of the screen, the tilt angle appears on the left side of the screen, and the pitch angle appears on the right side of the screen.



5. Long press the **Control Turret** to save and return to the home screen.

**NOTE:** The tilt angle is not shown in the figure because it is hidden by the menu.


# Bluetooth

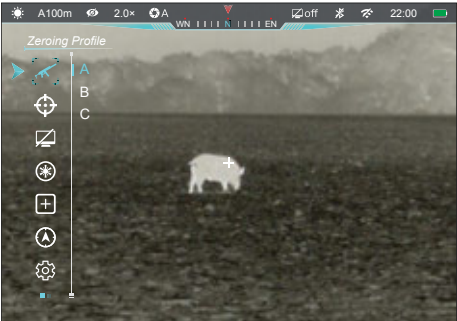
The Bluetooth function of the BOLT SE requires an IRAY-AC96 ILR-1200-1 Laser Rangefinder Module (optional/not included). Please consult the documentation included with your ILR-1200-1 for more information on its operation.

# Zeroing Profile

## Select the zeroing profile

To zero the BOLT SE, you must first select a zeroing profile to adjust. Each of the three zeroing profiles, A, B, and C, have three zero distances.

1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to select the zeroing profile  menu item.
3. Short press the **Control Turret** to enter the zeroing profile submenu.
4. Rotate the **Control Turret** to move through the zeroing profile options: A, B, and C.
5. Short press the **Control Turret** to confirm the selection and return to the main menu.
6. The selected zeroing profile, A, B, or C, appears in the status bar.




## Zeroing

### Select or customize a zero distance

In the zeroing menu, you can select a preset zero distance, customize a preset zero distance, and adjust the reticle position for the selected zero distance. The BOLT SE supports custom zeroing distances of 1 to 999 yards or 1 to 999 meters.





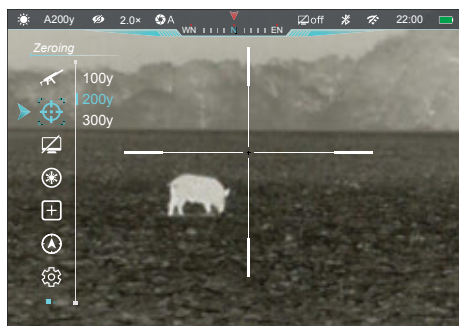
**NOTE:** Before selecting or customizing a zero distance, you must set a zeroing profile (A, B, or C). See **Main Menu > Zeroing Profile** on the previous page.

1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to select the zeroing  menu item.
3. Short press the **Control Turret** to enter the zeroing submenu. There are three zero distances available in the submenu.

## ZEROING MENU > ZERO DISTANCE SUBMENU

### Select or customize a preset zero distance


1. In the zeroing menu, rotate the **Control Turret** to select a zero distance.
2. Short press the **Control Turret** to enter the submenu for the selected zero distance.
3. In the submenu for the selected zero distance, you may:
  - a. Enter the reticle zeroing interface  to adjust the X/Y position of the reticle at the selected zero distance. See **Reticle Zeroing** on the next page.
  - b. Customize the selected preset zero distance . See **Customize Zero Distance** on page 32.

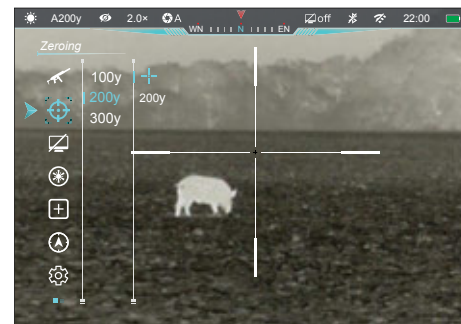


## ZEROING MENU > ZERO DISTANCE SUBMENU > RETICLE ZEROING

### Adjust the reticle position of the selected zero distance

In the reticle zeroing interface, the X/Y position of the reticle may be adjusted to match the point of impact.

1. In the submenu for the selected zero distance, the reticle zero  menu item is selected by default. Short press the **Control Turret** to select and enter the reticle zeroing interface.
2. The reticle zeroing interface has the following features:






- 1 **X:** Horizontal point of impact change (in cm or inches).
- 2 **Y:** Vertical point of impact change (in cm or inches).
- 3 **Freeze Icon:** Appears when the image is frozen.



- 4 **Reticle:** Shows the new reticle position.
- 5 **White Dot:** Indicates center of initial reticle position.

**NOTE:** The red "X" indicates the point of impact. It is shown in the figure for illustration purposes and is not an interface element.


3. Center the reticle on the aiming point and long press the **Control Turret** and **Power**  **Button** at the same time to freeze the image. The image freeze  icon will appear below the X/Y coordinates.
4. Select the axis (X or Y) along which to move the cursor:
  - a. Short press the **Control Turret** to switch between **X** and **Y**. The selected axis is indicated by blue text and the blue selection arrow.

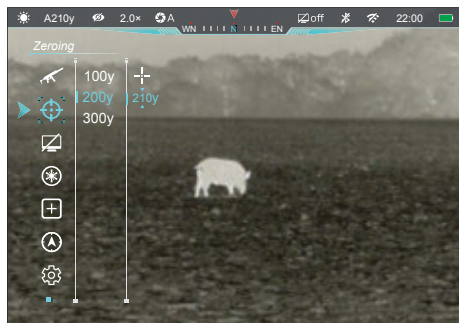
5. Adjust the X/Y position of the reticle until the reticle matches the point of impact.
  - a. **X** (horizontal) is the windage and **Y** (vertical) is the elevation.
  - b. Upon moving the reticle, a white dot appears onscreen, representing the original position of the reticle.
  - c. Rotate the **Control 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 reticle in the corresponding direction by 1 pixel. One full rotation (20 clicks) is equivalent to 20 pixels.
  - f. When adjusting your zero at a distance of 50 yards, one click will change the impact point by 0.14" as shown in the X and Y coordinate displays. At 100 yards that same click moves 0.29". At 200 yards one click moves 0.58".
  - g. Changing your zero distance will change the distance of your X/Y adjustments automatically. If your selected zero distance has a correction of 1.15" at 100 yards, it will automatically change to 2.30" if you change the zero distance to 200 yards.
6. Short press the **Power**  **Button** to exit the interface without saving the reticle position; **OR**
7. Long press **Control Turret** to save the reticle position and return to the home screen. A 5-second countdown appears on the screen, followed by "Saved Successfully."
8. 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.

## ZEROING MENU > ZERO DISTANCE SUBMENU > CUSTOMIZE ZERO DISTANCE

### Customize a preset zero distance

The BOLT SE supports custom zero distances of 1 to 999 yards or 1 to 999 meters.

1. In the submenu for the selected zero distance, rotate the **Control Turret** to select the distance customization  menu item.






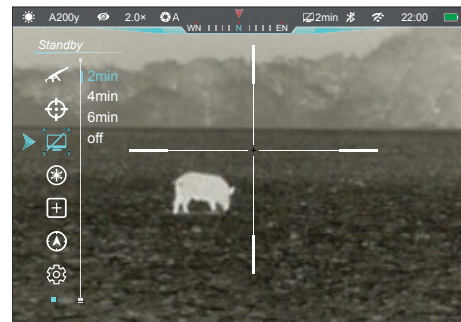
2. Short press the **Control Turret** to customize the zero distance. The selected distance turns blue and arrows appear above and below the first digit.
3. Rotate the **Control Turret** to increase or decrease the value of the first digit, from 0–9.
4. Short press the **Control Turret** to switch between the three digits. The two arrow icons will move to indicate the selected digit.
5. Long press the **Control Turret** to save the custom zero distance and return to the zero distance submenu.
6. The new zero distance appears on the left side of the status bar.

## Standby

### Set automatic standby status and time

To conserve battery, the BOLT SE may be set to automatically enter standby mode after a specified length of inactivity.

1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to select the standby  menu item.
3. Short press the **Control Turret** to enter the standby submenu.
4. Rotate the **Control Turret** to move through the standby options: 2min, 4min, 6min, and off.
5. Short press the **Control Turret** to confirm the selection and return to the main menu.
6. The standby icon  and status (2min, 4min, 6min, or off) appear on the right side of the status bar.
7. When 2, 4, or 6 minutes is selected, the BOLT SE will automatically enter standby mode, after the set length of inactivity to conserve battery life.
8. When in standby mode, short press the **Power**  **Button** to exit and return to the home screen.



## STANDBY NOTES:

- When **2min**, **4min**, or **6min** is selected:
  - The BOLT SE will enter standby mode 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°.
  - The BOLT SE will not enter standby mode while it is in a level firing position.
- When **off** is selected, standby mode is turned off and the rifle scope will operate until the batteries run out.

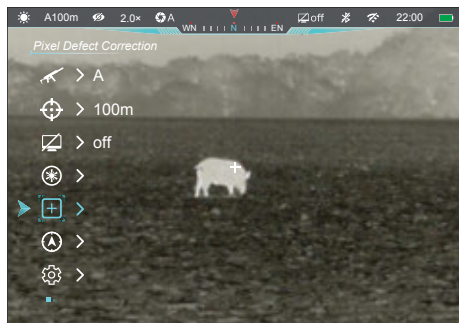
## Laser Calibration


The laser rangefinder function of the BOLT SE requires an IRAY-AC96 ILR-1200-1 Laser Rangefinder Module (optional/not included). Please consult the documentation included with your ILR-1200-1 for more information on its operation.

## 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 BOLT SE has a tool that corrects defective pixels on the sensor using its internal software.



1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to select the pixel defect correction  menu option.
3. Short press the **Control Turret** to enter the defective pixel correction interface.
4. The pixel correction interface has the following features:
  - 1 **X**: Select to move the cursor horizontally.
  - 2 **Y**: Select to move the cursor vertically.



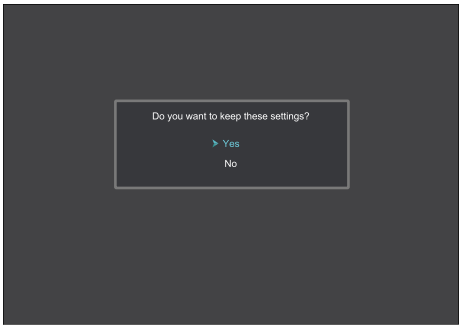
- 3  **00**: Shows the number of defective pixels in the “to be corrected” list.
- 4 **Cursor**: Move the cursor to the position of the defective pixel. The cursor appears in the center of the screen in place of the reticle.
- 5 **PIP Window**: Shows a close-up of the cursor location, and appears at the bottom of the screen.
5. Select the axis (X or Y) along which to move the cursor:
  - a. Short press the **Control Turret** to switch between **X** and **Y**. The selected axis is indicated by blue text and the blue selection arrow. The X-Axis is selected by default.
6. 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.
7. Repeat steps 5–6 to move the cursor along the second axis.
8. With the cursor in position, short press the **Power**  **Button** to add the defective pixel to the “to be corrected” list.
  - a. **Add** will briefly appear in the bottom-right corner of the PIP window.
  - b.  **00** will change to  **01** 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 **Power**  **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. **Del** will briefly appear in the PIP window.
10. Repeat steps 5–9 to add additional defective pixels, as needed.
11. When all defective pixels have been added to the list, long press the **Control Turret** to confirm changes.






- A popup window shows the message “Do you want to keep these settings?” and two options, Yes and No. Yes is selected by default.
- Short press the **Control Turret** to select **Yes** to correct the saved list of defective pixels and return to the home screen. A 5-second countdown appears on the screen, followed by a “Saved Successfully” ; **OR**
- Rotate the **Control Turret** to move to **No** and short press the **Control Turret** to return to the main menu without correcting any defective pixels.

**NOTE:** The PIP window will move to the upper-left corner of the screen when the cursor moves into the lower-left corner.



## Compass Calibration


### Calibrate the digital compass

- Long press the **Control Turret** to enter the main menu.
- Rotate the **Control Turret** to select the compass calibration  menu item.
- Short press the **Control Turret** to begin compass calibration. A triaxial coordinate prompt will appear on the screen.
- Follow the prompt to rotate the BOLT SE at least 360 degrees along each axis, X, Y, and Z. Rotations must be completed within the 40-second calibration time.
- After 40 seconds, the calibration is finished and the system will return to the home screen.



## Settings


### Set general settings

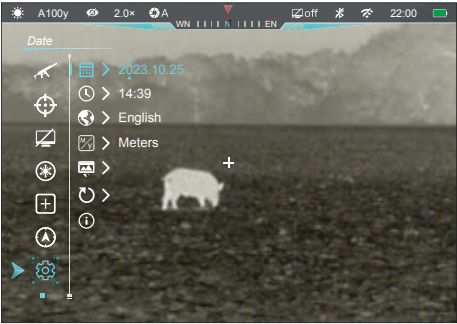
- Long press the **Control Turret** to enter the main menu.
- Rotate the **Control Turret** to select the settings  menu item.
- Short press the **Control Turret** to enter the settings submenu. There are seven submenu items: date, time, language, units of measure, status bar, factory reset, and info.
- To make changes to any of the submenu items, use the Control Turret: rotate to navigate to the selected submenu item, short press to select it, rotate to change submenu options, and long press to save any changes.



## SETTINGS MENU > DATE

### Set the date

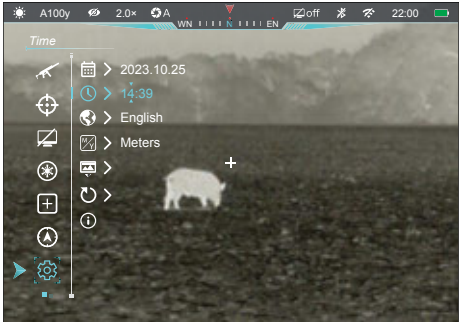
- In the settings submenu, the date  menu item is selected by default.
- Short press the **Control Turret** to edit the date. Arrow icons will appear above and below the year value. The date is displayed in YYYY.MM.DD format.
- Rotate the **Control Turret** to select the correct value for each digit (year, month, and day).
- Short press the **Control Turret** to switch between digits. The two arrow icons move to indicate the selected digit.
- Long press the **Control Turret** to save the date and return to the home screen.



SETTINGS MENU > TIME ⌚

Set the time

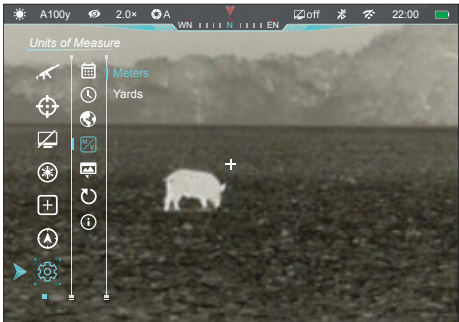
1. In the settings submenu, rotate the **Control Turret** to select the time ⌚ menu item.
2. Short press the **Control Turret** to edit the time. Arrow icons will appear above and below the hour value. The time is displayed in 24-hour format, HH:MM.
3. Rotate the **Control Turret** to select the correct value for each digit (hour and minute).
4. Short press the **Control Turret** to switch between digits. The two arrow icons move to indicate the selected digit.
5. Long press the **Control Turret** to save the time and return to the home screen.
6. The time appears on the right side of the status bar.



SETTINGS MENU > UNITS OF MEASURE M/Y

Select the units of measure

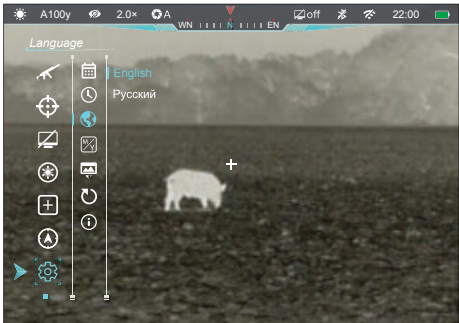
1. In the settings submenu, rotate the **Control Turret** to select the units of measure M/Y menu item.
2. Short press the **Control Turret** to enter the units of measure submenu.
3. Rotate the **Control Turret** to move through the options: meters and yards.
4. The selected units of measure (m or y) will display, along with the selected zero profile and distance, on the left side of the status bar.
5. Short press the **Control Turret** to confirm the selection and return to the settings submenu.



SETTINGS MENU > LANGUAGE 🌐

Select the language

1. In the settings submenu, rotate the **Control Turret** to select the language 🌐 menu item.
2. Short press the **Control Turret** to enter the language submenu.
3. Rotate the **Control Turret** to move through the language options.
4. Short press the **Control Turret** to confirm the selection and return to the settings submenu.



SETTINGS MENU > STATUS BAR 📶

Turn status bar auto hiding on / off

This function enables all interface information, aside from the reticle, to be automatically hidden for unobstructed image view. When auto-hide is turned on, after 8 seconds of inactivity the status bar, digital compass, and all interface icons will be automatically hidden. Shortcut buttons and the menu are disabled until the entire interface is again displayed. Press any button to un-hide the user interface.



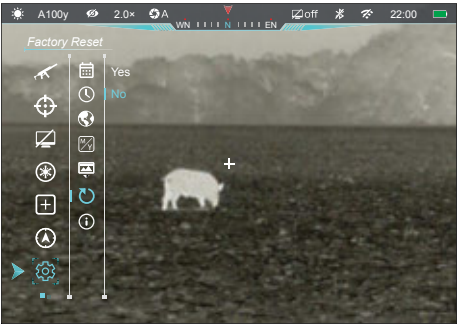
**NOTE:** When auto-hide is on and the main menu is open, the menu will hide after 15 seconds of inactivity and the rest of the user interface will hide after an additional 8 seconds.

1. In the settings submenu, rotate the **Control Turret** to select the auto hiding 📶 menu item.
2. Short press the **Control Turret** to enter the submenu.
3. Rotate the **Control Turret** to move through the options, show and hide.
4. Short press the **Control Turret** to confirm the selection and return to the settings submenu.

SETTINGS MENU > FACTORY RESET ↻

Reset to factory settings

1. In the settings submenu, rotate the **Control Turret** to select the factory reset ↻ menu item.
2. Short press the **Control Turret** to enter the factory reset submenu. Two options, Yes and No, appear; Yes will restore factory settings and No will cancel the operation. Yes is selected by default.
3. Short press the **Control Turret** to select **Yes** to confirm the factory reset. Factory settings will be restored and the BOLT SE will reboot automatically; **OR**
4. Rotate the **Control Turret** to move to **No** and short press the **Control Turret** to cancel the factory reset and return to the submenu.



NOTES:

- A factory reset cannot be undone.
- The settings listed below will be reset to the factory defaults:
  - Color Palette: White Hot
  - Recoil Activated Video: Off
  - Display Brightness: 3
  - Gravity Sensor: Off
  - Image Sharpness: 3
  - Bluetooth: Off
  - Magnification: 2.0×
  - Zeroing Profile: A
  - Reticle Type: 1
  - Standby: Off
  - Reticle Color: Black
  - Language: English
  - PIP: Off
  - Status Auto Hiding: Show
  - Ultra-clear mode: Off
  - Wi-Fi SSID: TLXX\_SE\_YYYYYY
  - Wi-Fi: Off
  - Wi-Fi Password: 12345678
  - Calibration: Automatic

SETTINGS MENU > INFO ⓘ

Show device information

1. In the settings submenu, rotate the **Control Turret** to move through the submenu and select the info ⓘ menu item.
2. Short press the **Control Turret** to enter the info submenu which displays the following device information: GUI version, hardware version, SN and PN numbers, and GPGA version.
3. Long press the **Control Turret** to return to the settings submenu.



23. BASIC INSPECTION

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

- The rifle scope appearance: there should be no cracks in the body or visible damage.
- The condition of the objective lens and eyepiece: there should be no cracks, greasy spots, dirt, or other deposits on the lens.
- The internal rechargeable battery pack should be fully charged.
- The control buttons and turret should be in working order.
- The mount should be tight and correctly installed on the rail.

24. BASIC MAINTENANCE

Always replace the objective lens cap (7) 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 rifle scope using a non-greasy organic solvent.



- Check the lens and eyepiece. If necessary, remove any dirt or sand from the optics; a non-contact cleaning method is preferred.
- Cleaning the exterior of the lens should only be done with the included microfiber lens cloth or a similar product. Only clean the lens when it is visibly soiled. Frequent wiping or cleaning can degrade the anti-reflective lens coating.

## 25. 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 BOLT SE rifle scope at [irayusa.com/register](http://irayusa.com/register).

ISSUE	POSSIBLE CAUSES
The BOLT SE will not turn on.	The built-in battery pack is very low or has completely discharged.
The BOLT SE can not connect to a computer or external power supply.	External power supply has completely discharged.
	Computer is turned off.
	Data cable is damaged.
The BOLT SE can not connect to the mobile device (smartphone or tablet).	Wi-Fi is not turned on.
	Wrong Wi-Fi password entered.
	Too many Wi-Fi signals near the BOLT SE.

To return a product for repair:

1. Go to [irayusa.com/warranty](http://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.

### 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](http://irayusa.com/warranty), or email [info@irayusa.com](mailto:info@irayusa.com) with any questions.

## 26. GENERAL TROUBLESHOOTING

The troubleshooting table below lists issues that may occur when operating the BOLT SE. Carry out the recommended troubleshooting steps in the order shown in the table. Please contact iRayUSA at 800-769-7125 or [irayusa.com/support](http://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.

TROUBLESHOOTING STEPS
Charge the built-in battery pack.
Check the external power supply and charge it if necessary.
Power on the computer.
Replace the USB-C to analog RCA/USB data cable.
Turn on Wi-Fi in the main menu. See <b>Main Menu &gt; Wi-Fi</b> on page 27.
On the mobile device, go to <b>Settings &gt; Wi-Fi</b> and enter the correct password. The default password is 12345678. See <b>Main Menu &gt; Wi-Fi</b> on page 27.
Move the BOLT SE and mobile device to an area with no or fewer Wi-Fi signals.

ISSUE	POSSIBLE CAUSES
Wi-Fi signal is lost or interrupted.	Smartphone or tablet is out of range of a strong Wi-Fi signal, or there are obstacles between the BOLT SE and the mobile device.
The image is fuzzy, not clear, not balanced, or has artifacts.	Non-uniformity correction is required.
The image is too dark.	Display brightness level is too low.
The GUI is clear, but the image is fuzzy.	The lens is not focused.
	There is dust on the interior or exterior optical surfaces of the lens.
	There is condensation on the interior or exterior optical surfaces of the lens.
The aiming reticle shifts after firing rounds.	The BOLT SE is not mounted securely or the mount is not secured on the BOLT SE.
The image of the object being observed is missing.	Looking through glass.
The BOLT SE will not focus.	Image settings are not optimal for the current environmental conditions or the object being observed.
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.
When the BOLT SE is used in low-temperature conditions, the image quality of the surroundings is worse than in warm-temperature conditions.	Environmental conditions.

TROUBLESHOOTING STEPS
<ul style="list-style-type: none"> <li>Try again when the Wi-Fi signal is stable.</li> <li>Move the BOLT SE closer to the Wi-Fi signal.</li> </ul>
Perform a non-uniformity correction. See <b>Non-uniformity Correction</b> on page 20.
From the home screen, short press the <b>Brightness button</b> to adjust the display brightness.
<ul style="list-style-type: none"> <li>Adjust the focus on the target by rotating the Objective Lens Focus Ring <b>(6)</b></li> <li>Adjust the image sharpness in the quick menu. See <b>Using the Quick Menu</b> on page 16.</li> </ul>
<ul style="list-style-type: none"> <li>Wipe the external optical surface with the included microfiber lens cloth.</li> </ul>
<ul style="list-style-type: none"> <li>Wipe the external optical surface with the included microfiber lens cloth.</li> <li>Allow the BOLT SE to dry by leaving it in a warm, dry environment for at least 4 hours.</li> </ul>
<ul style="list-style-type: none"> <li>Check that the BOLT SE has been securely mounted.</li> <li>Make sure you are using the same brand, type, and weight of the bullets as when the BOLT SE and weapon were initially zeroed.</li> <li>If the BOLT SE was zeroed in different environmental conditions, a slight shift of the zero is possible.</li> </ul>
Remove any glass windows from the field of view.
<ul style="list-style-type: none"> <li>Check the external optical surface of the objective lens and eyepiece and, where necessary, wipe away any dust, condensation, frost, etc.</li> <li>In cold weather, you can use special anti-fogging coatings, such as those made for corrective glasses.</li> <li>Adjust the focus on the target by rotating the Objective Lens Focus Ring <b>(6)</b>.</li> <li>Adjust the image sharpness in the quick menu. See <b>Using the Quick Menu</b> on page 16.</li> <li>Adjust the image and device settings. See <b>Quick Start Guide</b> on page 8.</li> <li>Turn on Ultra-clear mode. See <b>Main Menu &gt; Ultra-clear</b> on page 26.</li> </ul>
Turn on Ultra-clear mode. See <b>Main Menu &gt; Ultra-clear</b> on page 26.
In warm-temperature conditions, observed objects (the surroundings and background) heat differently due to thermal conductivity, thereby generating a high-temperature contrast. Accordingly, the image quality produced by the thermal imager will be high. In low-temperature conditions, the background will cool to roughly the same temperature, and thus the temperature and scene contrast are substantially reduced, resulting in reduced image detail. This is a normal function of a thermal imager and not an indicator of detector performance.



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