

I N F I R A Y O U T D O O R

BOLT DIGITAL SERIES

Bolt Action Optimized Digital Night Vision Scope



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.

FCC ID 2AYGT-TD50L

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.

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1. OVERVIEW

The InfiRay Outdoor BOLT TD50L is a high-performance digital night vision optic for the discerning hunter looking for classic aesthetics and excellent low-light sensitivity. The TD50L is built around an ultra-sensitive 1440×1080 CMOS Sensor with multiple imaging modes and a 600-yard viewing range. Additional features include a 4× continuous zoom, picture-in-picture mode, and an optional, external Infrared Illuminator. Powered by a dual-battery design with 13+ hour run-time and protected with an IP67 rating, the TD50L can last all night in any hunting conditions.

2. FEATURES

- 4 μm CMOS sensor
- High-resolution display
- 4× continuous zoom
- Optional, external Infrared Illuminator
- Dual-power supply solution for extended operation
- Traditional 30mm diameter housing design
- Stadiametric rangefinder
- 600 yard detection range
- 50Hz image refresh rate
- 16 GB internal storage
- Wi-Fi module for external connectivity to App
- Picture in Picture (PIP)
- Extended eye relief
- User-friendly interface

3. TECH SPECS

BOLT TD50L SERIES	TD50L
SENSOR	
Resolution	1440×1080
Pixel Size	4 μm
Frame Rate	50 Hz
Core	CMOS
OPTICS	
Objective Lens	50 mm /f1.2
Magnification	4×
Digital Zoom	4×
Field of View	6.6° × 4.9°
Detection Range	600 Yards
Display Type	LCOS
Display Resolution	1280×960
Imaging Modes	Day Mode, Moon Mode, and Star Mode
Reticle Types	6
Reticle Colors	Black, White, Red, Green
Mounting System	30mm Rings (included)
P.I.P	Yes
Rangefinder	Stadiametric
Eye Relief	70mm
Diopter Range	-4 to +4
ELECTRONICS	
Onboard Recording	Video and Image
Onboard Storage	16 GB
Wireless Connectivity	Video and Image via App
Data/Power Connector	USB-C
Power Supply	Built-in Battery Pack (10 Hours), 18500 Battery (+3 Hours), 18650 Battery (+4 Hours)
Start Up Time	< 10 Seconds, Instant from Standby
PHYSICAL	
Size	15.55" × 3.34" × 2.95"
Weight	35.27 oz
ENVIRONMENTAL/WARRANTY	
Warranty	5 Years
Housing Material	T-6061 Aluminum
Ingress Protection	IP67
Operation Temperature	-4°F ~ 122°F
Max. Recoil	1000 g/s ² (300 Win./7mm Mag)

4. ACCESSORIES

The BOLT TD50L Series ships with everything you need to get out and hunt. The included items are as follows:

- BOLT TD50L Series Bolt Action Optimized Digital Night Vision Scope
- Objective lens cap
- Eyeshade
- 30mm ring mounts for picatinny rail
- Infrared Illuminator
- Soft case
- USB-C cable for data/video
- Wall adapter
- Lens cloth
- User manual

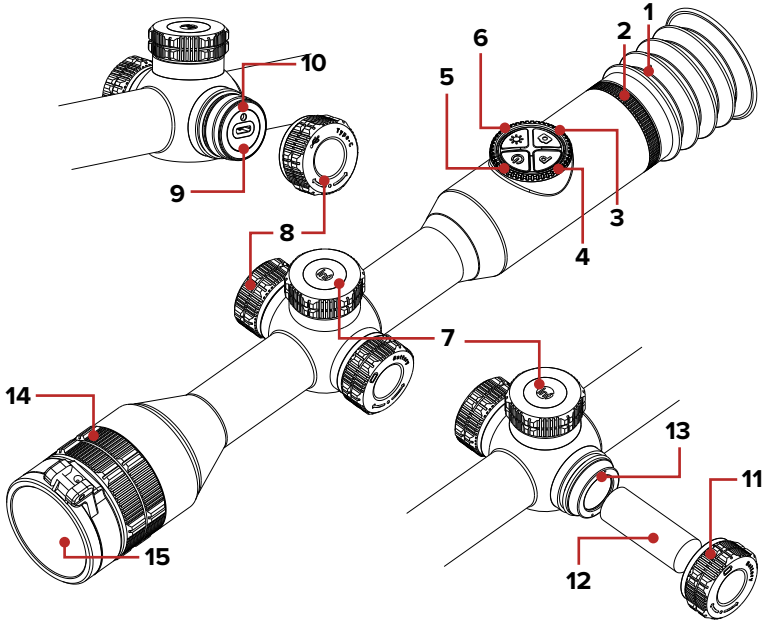


Optional and replacement accessories for the BOLT TD50L Series are available to customize your experience and those include:

PART NO.	DESCRIPTION
IRAY-AC08	USB-C to Analog RCA/USB Cable 36"
IRAY-AC18	BOLT Standard Scope Mount Rings
IRAY-AC37	BOLT 18650 Battery Extender*
IRAY-AC70	BOLT Digital Series Infrared Illuminator
IRAY-AC71	Standard Rubber Eyeguard for BOLT
IRAY-AC74	Objective Lens Cap for 50mm BOLT Digital Series

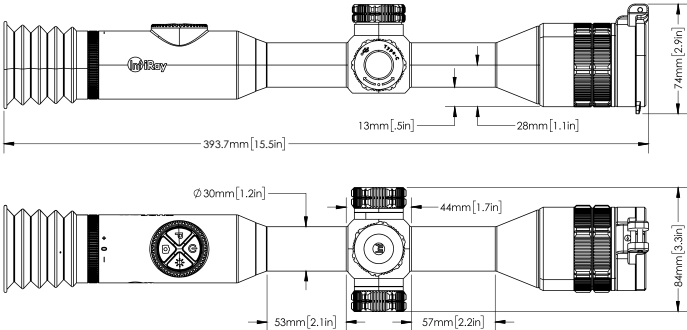
*For use with 18650 auxiliary battery (optional/not included)

5. COMPONENTS AND CONTROLS





- 1 Eyeguard
- 2 Eyepiece Diopter Adjustment Ring
- 3 Photo Button
- 4 Palette Button
- 5 Power Button
- 6 Brightness Button
- 7 Tactile Control Turret
- 8 USB-C Port Cover
- 9 USB-C Port
- 10 LED Status Indicator
- 11 Auxiliary Battery Cover
- 12 18500/18650 Auxiliary Battery (optional/not included)
- 13 Auxiliary Battery Compartment
- 14 Objective Lens Focus Ring
- 15 Objective Lens Cap

6. PRODUCT DIMENSIONS



7. 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	Enter standby mode	Power off the device
Standby mode	Exit standby mode	---
Main menu	Return to previous without saving changes	---
Reticle zeroing interface	Exit interface and return the reticle to the last saved zero position	---

Palette Button 		
Current Screen / Menu	Short Press	Long Press
Home screen	Switch the imaging mode	Turn PIP window on / off

Palette + Brightness Button  + 		
Current Screen / Menu	Short Press	Long Press
Home screen	---	Activate / deactivate the reticle

Brightness Button 		
Current Screen / Menu	Short Press	Long Press
Home screen	Adjust the screen brightness	Enter / exit the stadiametric rangefinder




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

Photo + Palette Button  + 		
Current Screen / Menu	Short Press	Long Press
Reticle zero interface	---	Freeze image to keep reticle centered on aiming point; press again to clear frozen image


Control Turret			
Current Screen / Menu	Short Press	Long Press	Rotate
Home screen	Enter quick menu	Enter main menu	Adjust digital zoom level
Quick menu	Adjust parameters for a menu item	Return to home screen	Switch menu options; move menu cursor; move reticle position Clockwise: Move left / down Counterclockwise: Move right / up
Main menu	Confirm changes; open the submenu	Return to home screen	
Reticle zero interface	Switch between X and Y Axis	Save changes and exit to home screen	

8. QUICK START GUIDE

Step 1: Preparing to Use the BOLT TD50L 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. Install the eyeguard (1).
4. Charge the built-in battery pack before using the BOLT TD50L for the first time. See **Charging the Built-in Battery Pack** on page 10.
5. Mount the BOLT TD50L to the weapon using the included 30mm rings. See **Mounting the BOLT TD50L** on page 15.



Step 2: Turn On the BOLT TD50L and Adjust the Focus

1. Open the objective lens cap (15). If the sunlight is too bright, you may leave the lens cap closed to prevent the image from being overexposed.
2. Long press the **Power**  **Button** for 2 seconds to power on the BOLT TD50L. The InfiRay logo will appear.
3. Rotate the diopter adjustment ring (2) of the eyepiece until the interface icons are clearly visible.
4. Rotate the objective lens focus ring (14) 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: Activate and Customize the Reticle

From the home screen:

1. Press and hold the **Brightness**  and **Palette**  **Buttons** at the same time for 15 seconds to activate the reticle.
2. Short press the **Control Turret** to enter the quick menu (see **Using the Quick Menu** on page 21):
 - a. Select the reticle color, white, black, red, or green. The default is white.
 - b. Select the reticle type, from 1–6. The default type is 1.

Step 4: Adjust the Image Settings

From the home screen:

1. Short press the **Palette**  **Button** to set the imaging mode, day, moon, and star. Day is the default.
2. Short press the **Brightness**  **Button** to adjust the screen brightness, from level 1–5. The selected screen brightness appears in the status bar. The default is 3.
3. Rotate the **Control Turret** to zoom in and out on the observed object. See **Digital Zoom** on page 29.
4. Long press the **Palette**  **Button** to turn on the PIP window, if desired. See **Picture in Picture (PIP)** on page 29.

Step 5: Adjust Rifle Scope Settings

1. From the home screen, long press the **Control Turret** to enter the main menu to:
 - a. Set the date and time. See **Settings Menu > Date** on page 38 and **Settings Menu > Time** on page 39.
 - b. Set the units of measurement, meters or yards. The default is yards. See **Settings Menu > Units of Measure** on page 40.

Step 6: Zero the BOLT TD50L

1. From the home screen, long press the **Control Turret** to enter the main menu to:
 - a. Select the zeroing profile, A, B, or C. See **Main Menu > Zeroing Profile** on page 32.
 - b. Select, or customize, a preset zero distance that matches the target distance. See **Zeroing Menu** on page 33.
 - c. Zero the reticle. See **Zeroing Menu > Reticle Zeroing** on page 34.

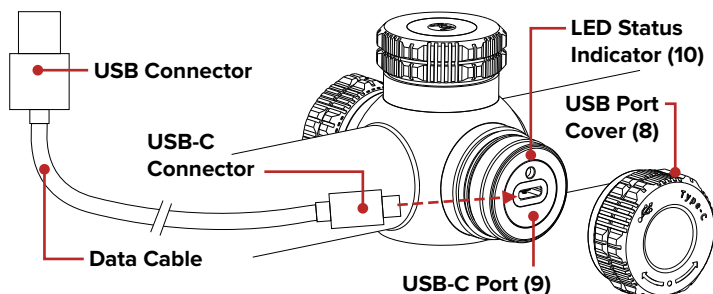
9. CHARGING THE BUILT-IN BATTERY PACK

The BOLT TD50L Series has a dual power supply: a built-in rechargeable li-ion battery pack and an optional auxiliary battery (18500 or 18650 with adapter; batteries not included). The dual-battery system supports a run time of 10 hours out of the box and 13+ hours when using an auxiliary battery.

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 USB-C port cover (8) by turning it counterclockwise.
2. Connect the smaller USB-C end of the data cable to the USB-C port (9).
3. Connect the standard USB end of the data cable to the USB power adapter, and plug the power adapter into a wall outlet.
 - a. The included 5V–2A USB power adapter (16) and plug the power adapter into a wall outlet; **OR**
 - b. Any standard USB 3.0 port on a laptop/computer.
4. While charging, the LED status indicator (10) above the USB-C port will turn red. When the indicator LED turns green, the battery is fully charged.



5. When fully charged, disconnect the data cable from the USB-C port and replace the USB-C port cover (8).
 - a. Do not overcharge the battery.
 - b. See **Battery Status Icons** on page 12 for additional battery information.

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

NOTES:

- You may charge and operate BOLT TD50L at the same time.
- When the battery status icon in the status bar becomes the low battery  icon, charge the battery right away.
- While charging, the battery status icon will change to the charging  icon.
- Only the built-in battery pack will be charged while connected via the USB-C port.

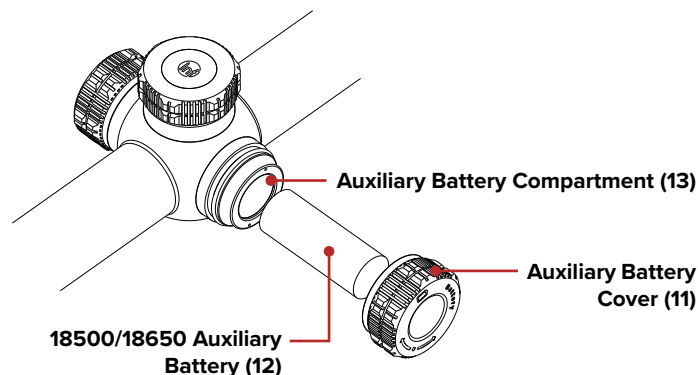
10. INSTALLING AN AUXILIARY BATTERY

The optional auxiliary battery compartment allows the run-time of the BOLT TD50L to be expanded to 13+ hours. 18500, or 18650 with adapter, rechargeable li-ion batteries (optional/not included) are compatible with the BOLT TD50L.

Ensure the 18500/18650 auxiliary battery is fully charged before using with the BOLT TD50L for the first time.

To install an auxiliary battery:

1. Remove the auxiliary battery cover (11) by turning it counterclockwise.
2. Insert a 18500 battery (or 18650 plus adapter) (12) into the auxiliary battery compartment (13) following the polarity markings inside the compartment. The positive [+] battery terminal faces in and the negative [-] terminal faces out.
3. Replace the battery cover (11).



NOTE: If using a 18650 battery, you will need to replace the standard auxiliary battery cover (11) with the IRAY-AC37 BOLT 18650 Battery Extender.

11. BATTERY STATUS ICONS






The battery status icon for the built-in battery pack appears at the right side of the status bar at the top of the screen.

If an optional auxiliary battery is installed in the BOLT TD50L, a battery status icon for the auxiliary battery appears to the left of the status icon for the built-in battery pack.

The battery status icon for the active battery (the battery currently being used to power the BOLT TD50L) is displayed in color, while the inactive battery is displayed in gray.

Battery charge levels are indicated by the color and fill-level of the icon for the active battery and the fill-level of the gray icon for the inactive battery.

While charging, the charging ⚡ icon in the status bar will appear inside the status icon for the built-in battery icon. Charge the built-in battery pack when it reaches the red battery status color to avoid over-discharge and potential damage to the battery.

ICON	COLOR / STATUS	BATTERY STATUS
	Green	More than 40%
	Yellow	20% – 40%
	Red	<20%; charge the battery right away
	Charging Icon	The built-in battery pack is charging (external power supply or computer is connected via the data cable)
	Inactive (Gray) Battery	Battery status of the inactive battery

12. SWITCHING THE BATTERY POWER SUPPLY

The BOLT TD50L Series has a dual power supply system with a built-in li-ion battery pack and an auxiliary battery option. 18500, or 18650 with adapter, rechargeable li-ion batteries (optional/not included) are compatible with the BOLT TD50L.

Using with the Optional Auxiliary Battery

- When both the built-in battery pack and the auxiliary battery are fully charged, the BOLT TD50L will select the auxiliary battery as its primary power source.
- If the power of the auxiliary battery is low, or the auxiliary battery is removed, the BOLT TD50L will automatically switch to the built-in battery pack as its primary power supply. Operation will not be interrupted during this time.
- When the BOLT TD50L is in use, you may insert (or replace) an auxiliary battery without powering off. Power will automatically switch to the built-in battery during replacement of the auxiliary battery.

Using with an External Power Source

When the data cable is used to connect the BOLT TD50L, via the USB-C port, to a computer or external power source (such as a standard wall outlet or an external power supply), the rifle scope will switch to the external power source and begin charging the built-in battery pack. See **External Power Supply** on the next page for more information.

While charging, the built-in battery status icon shown in the status bar will change to the charging ⚡ icon. See **Battery Status Icons** on page 12.

NOTE: Only the built-in battery pack will be charged while connected via the USB-C port.

13. BATTERY SAFETY PRECAUTIONS

Only charge the BOLT TD50L with a standard 5V–2A USB adapter, as included in the BOLT TD50L kit. Using any other type of adapters may lead to irreversible damage to the battery, adapter, or rifle scope. This damage is not covered under warranty.

If your BOLT TD50L has been stored for an extended period, it should be charged before using.

WARNINGS:

- Avoid storing a fully charged or discharged battery for extended periods.
- Do not charge an extremely cold battery without bringing it into a warm environment. Let the battery warm up for 45 minutes before charging.
- Do not use any USB cable or power adapter that has been modified or damaged to charge the BOLT TD50L.
- Charge the BOLT TD50L at a temperature range from 30°F to 100°F, otherwise the battery life will be reduced significantly.
- Do not leave the BOLT TD50L unattended while charging.
- Avoid leaving the BOLT TD50L connected to the USB power adapter for extended periods after it has been fully charged.
- The BOLT TD50L has a short-circuit protection system. However, any situation that may cause short-circuiting should be avoided.
- The recommended operation temperature range is -4°F to 122°F. Avoid operating out of this temperature range, otherwise you may experience a shortened battery life.
- Avoid using the battery pack above the maximum or below the minimum recommended temperature listed above as this may decrease the battery pack capacity or service life. This is considered normal operation and should not be considered a defect.
- Keep the battery pack out of the reach of children and pets.
- Only use compatible 18650, or 18500 and adapter, rechargeable batteries (not included/optional) in the auxiliary battery compartment.

14. EXTERNAL POWER SUPPLY

The BOLT TD50L Series supports the use of an external power supply, such as a 5V mobile power bank. The external power supply may be used with or without the optional auxiliary battery installed.

To connect the BOLT TD50L to an external power supply:

1. Remove the USB-C port cover (8) by turning it counterclockwise.
2. Connect the smaller USB-C end of the data cable to the USB-C port (9).
3. Connect the standard USB end of the data cable to the external power supply. The BOLT TD50L will automatically switch to using the external power supply for power and it will begin charging the internal battery pack.
 - a. While charging, the charging ⚡ icon will appear inside the built-in battery icon in the status bar.

- b. The color and fill-level of the built-in battery icon will change to reflect the current battery charge. See **Battery Status Icons** on page 12.

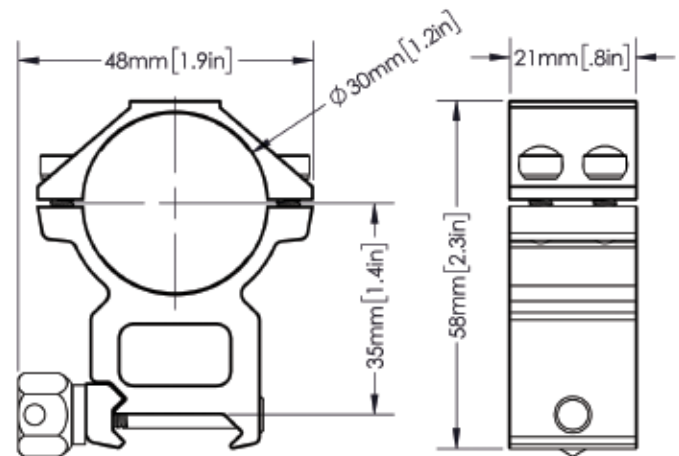
4. When the external power supply is turned off, the BOLT TD50L will switch to the auxiliary battery without turning off.
5. If no auxiliary battery is installed or the auxiliary battery level is low, the BOLT TD50L will switch to the built-in battery pack, instead of shutting down.

NOTE: Do not connect the BOLT TD50L to an external device with a power supply that exceeds the 3.0 USB cable.

15. MOUNTING THE BOLT TD50L

To ensure accurate results, please first properly mount the BOLT TD50L Series on your rifle.

The BOLT TD50L Series 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. A torque driver is required to control the torque.



MOUNTING NOTES:

- When mounting the BOLT TD50L on a rifle, adjust its position so that proper eye relief (70 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 TD50L 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 TD50L, zero the rifle scope. See **Zeroing the BOLT TD50L** on page 23 for instructions.

16. MOUNTING THE INFRARED ILLUMINATOR

The TD50L includes an optional Infrared Illuminator that can be used to supplement available light when conditions require. To use the Illuminator, you must first install it onto the included QD mount:

1. Install the body of the Illuminator into the smaller-diameter end of the mount and use the included Allen wrench to tighten the two screws until snug.
2. Open the larger-diameter end of the Illuminator mount by loosening the tension arm on the top of the mount.
3. Place the open end of the mount around the body of the TD50L, ensuring that the placement will not impair the operation of the scope or weapon, and tighten the tension arm to secure it.
4. Twist the tension arm to adjust tension, as needed.



To turn the Illuminator on and adjust the beam angle:

1. Turn the tail switch to cycle between the three available power levels (low, medium, and high output).
2. Once a suitable power lever is selected, adjust the beam path by turning the bezel of the Illuminator (flood to beam).
3. Using the included Allen wrench, slightly loosen the two screws on the small side of the mount holding the Illuminator in place.
4. Adjust the Illuminator by pointing it so that the beam lands in the desired position in your sight picture, and retighten the two screws.

CAUTION: Never look directly into the beam of the Illuminator to check operation. The Illuminator uses concentrated infrared light, which while not visible to the human eye, can cause permanent physical damage.


17. OPERATING INSTRUCTIONS

Control Features

The BOLT TD50L is operated via four control buttons and a large metal tactile control turret. The large, easy-find control turret provides audible and tactile feedback when twisted and when 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 / Starting



1. Open the objective lens cap (15).
2. Long press the **Power**  **Button** for 2 seconds to power on the BOLT TD50L. The home screen appears after 3 seconds.

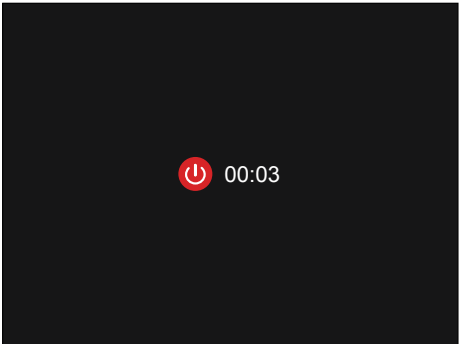
To determine the current charge of the built-in battery pack, check the battery icon on the right side of the status bar at the top of the viewscreen. See **Battery Status Indicators** on page 12.

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.

Powering Off / Stopping

To power off the BOLT TD50L:

1. Press and hold the **Power**  **Button**. The standby screen will open, showing a 3-second countdown.
2. Continue holding the **Power**  **Button** until the 3-second countdown completes.



NOTE: Releasing the **Power**  **Button** at any time before the countdown reaches zero will stop the shutdown process.



WARNING: Do not remove the power supply when saving data, otherwise the data may not be saved.

STANDBY MODE

Standby mode may be activated either manually or automatically to conserve the battery life of the rifle scope.

Automatically Enter Standby Mode

In the main menu, the BOLT TD50L may be set to automatically enter standby mode after a specified time with no operation (10, 20, or 30 minutes). See **Main Menu > Standby** on page 37 for detailed instructions.


1. In the main menu, select the desired standby time, 10, 20, or 30 minutes. See **Main Menu > Standby** on page 37 for instructions.
2. The standby icon  and status (10min, 20min, 30min, or off) appear in the status bar.
3. Once set, the BOLT TD50L will automatically enter standby mode, after the set number of minutes of inactivity, to conserve battery life.
4. Short press the **Power**  **Button** to exit standby and return to the home screen.

NOTES:

- When **10min**, **20min**, or **30min** is selected:
 - The BOLT TD50L will enter standby mode automatically when the BOLT TD50L 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 TD50L 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.

Manually Enter Standby Mode

Standby mode may be activated manually from the home screen at any time.

1. Short press the **Power**  **Button** to enter / exit standby mode.

Adjusting the Focus

ADJUSTING THE DIOPTER/EYEPIECE

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

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 **(14)** 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. Open the objective lens cap **(15)**.
2. If the sunlight is too bright, you may leave the lens cap closed to prevent the image from being overexposed.
3. Rotate the objective lens focus ring **(14)** 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 is inactive when the BOLT TD50L is powered on for the first time. To activate the reticle, or to deactivate it at a later time:

1. From the home screen, press and hold the **Brightness**  and **Palette**  **Buttons** at the same time for more than 15 seconds.

Adjusting the Rifle Scope Image Settings

If you did not complete Step 4 Adjust the Image Settings in the Quick Start Guide to adjust the image settings, go ahead and follow the steps below.

From the home screen:

1. Short press the **Palette**  **Button** to set the imaging mode, day, moon, and star. Day is the default.
2. Short press the **Brightness**  **Button** to adjust the screen brightness, from level 1–5. The default is 3. The selected brightness level appears in the status bar.
3. Rotate the **Control Turret** to zoom in and out on the observed object. See **Digital Zoom** on page 29.
4. Long press the **Palette**  **Button** to turn on the PIP window, if desired. See **Picture in Picture (PIP)** on page 29.

Status Bar Overview

The status bar shows information on the operating status of the BOLT TD50L Series:



- 1 Imaging Mode:** Shows the set imaging mode, ☀ day, 🌙 moon, ★ star. Day is the default.
- 2 Zeroing Profile & Distance:** Shows the selected zero profile (A, B, or C) and the zero distance. A100m is the default.
- 3 Total Magnification:** Shows the total magnification. See **Digital Zoom** on page 29.
- 4 Screen Brightness:** Shows the selected screen brightness, from 1–5. The default level is 3.
- 5 Standby:** Shows the standby ☒ icon and the set time, 10min, 20min, 30min, or off. Standby is off by default.
- 6 Wi-Fi:** Shows the Wi-Fi status, on 📶 or off 🚫. Wi-Fi is off by default.
- 7 Time:** Shows the current time in 24-hour format.
- 8 Auxiliary Battery Status Indicator:** Shows the battery status of the rechargeable auxiliary battery. When the BOLT TD50L is receiving power from the auxiliary battery, the battery indicator is in color; when inactive, the battery indicator is gray. See **Battery Status Indicators** on page 12.
- 9 Built-in Battery Status Indicator:** Shows the battery status of the built-in battery pack. When the BOLT TD50L is receiving power from the battery pack, the battery indicator is in color; when inactive, the battery indicator is gray. See **Battery Status Indicators** on page 12.

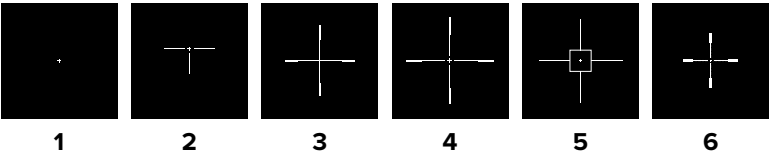
Using the Quick Menu

Reticle color, reticle type, and zeroing distance can be set in the quick menu.



- 1. From the home screen, short press the **Control Turret** to enter the quick menu.
- 2. Rotate the **Control Turret** to switch between the quick menu items, described below. The selected menu item is back-highlighted blue.
 - a. **Reticle Color:** Short press the **Control Turret** to change the reticle color between white, black, red, and green.
 - b. **Reticle Type:** Short press the **Control Turret** to change reticle type, from 1–6. See **Reticle Types** below.
 - c. **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 zeroing distance appears in the status bar.
- 3. Long press the **Control Turret** to save changes and exit the menu or wait 5 seconds to save and exit automatically.

RETICLE TYPES




Navigating the Main Menu

From the home screen, long press the **Control Turret** to enter the main menu.






In all menu interfaces:

- Menu icons turn blue to indicate the current position in the main menu.
- Submenu options are back-highlighted blue to indicate the current position in the submenu.
- Use the **Control Turret** to navigate the menu:
 - **Rotate** to move up and down through the menu to switch between the menu options.
 - **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 exit 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 (except a change to the Wi-Fi on/off toggle) are NOT saved automatically.
- Upon exiting from the main menu the cursor location is stored for a single working session (until the BOLT TD50L is turned off). After restarting the BOLT TD50L and entering the menu, the cursor position will be at the first menu item.

18. ZEROING THE BOLT TD50L

BOLT TD50L Series features the “freeze” zeroing method. To zero the BOLT TD50L rifle scope:

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, if you have not done so already. See **Quick Start Guide** on page 8.
4. Select the zeroing profile, A, B, or C. See **Main Menu > Zeroing Profile** on page 32.
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 TD50L supports custom zeroing distances of 1 to 999 meters or 1 to 999 yards. See **Zeroing Menu** on page 33.
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):
 - a. In the Reticle Zeroing interface, keep the reticle centered on the point of aim, and long press the **Photo**  and **Palette**  **Buttons** at the same time until the freeze  icon appears below the X/Y coordinates. The image is now frozen. See **Zeroing Menu > Reticle Zeroing** on page 34.
 - b. In the Reticle Zeroing interface, adjust the X/Y position of the reticle. See **Zeroing Menu > Reticle Zeroing** on page 34.
10. 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.

19. PHOTOGRAPHY AND VIDEO RECORDING



The BOLT TD50L is equipped with video recording and image capture.

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 39. Alternately, the date and time may be synchronized with one button in the InfiRay Outdoor App. See **Using the InfiRay Outdoor App** on page 28.

NOTE: All recorded videos and photos are automatically saved to the built-in 16 GB memory storage.

Photography




To take a photo:

1. From the home screen, short press the **Photo  Button**.
2. The image will freeze for 0.5 seconds and the camera  icon will appear briefly in the upper-left corner of screen.



Video Recording 00:05:11

To record video:

1. From the home screen, long press the **Photo  Button** to start a video recording.
2. When the video recording starts, the video recording timer, in HH:MM:SS (hour: minute: second) format, appears in the upper-right corner of the screen.
3. When recording, short press the **Photo  Button** to take a photo.
4. Long press the **Photo  Button** to stop and save the video recording.



Video and Photography Tips

- You may enter and navigate the menu as normal during video recording. The user interface (the status bar, icons, and menu) is not captured in recorded video or photo files.
- Recorded photos are saved to the internal memory card in .jpg format, videos are saved in .mp4 format.
 - a. Photos are saved in IMG_HHMMSS_XXX.jpg format.
 - b. Videos are saved in VID_HHMMSS_XXX.mp4 format.
 - c. HHMMSS is hour/minute/second.
 - d. XXX is a 3-digit counter number.
- The counter number used for the names of multimedia files cannot be reset.
- If a file is deleted from the list, its counter number is not taken by another file.

CAUTION:

- The maximum duration of a recorded video file is 10 minutes. After this time, video recording will automatically begin a new file.
- The number of the recorded files is limited only by the capacity of the internal memory.
- Check the available space of the internal storage card regularly and move the footage to other storage media to free up the memory card space.
- The reticle is captured in recorded video and photo files, but graphic data (the status bar, icons, and menu) are not.

20. ACCESSING THE INTERNAL MEMORY

When the BOLT TD50L 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 TD50L and remove the USB port cover **(8)**.
2. Connect the smaller USB-C end of the data cable to the USB-C port **(9)**.
3. Connect the standard USB end of the data cable in to the USB port on your computer.
4. Double-click **My Computer** on the desktop of your computer.
5. Double-click to open the USB drive named **BOLT**.

- 6. Double-click to open the folder named **Internal Storage** to access the built-in memory.
 - a. The device shows the available space (in GB) remaining of the 16 GB of 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.


21. CONNECTING TO WI-FI

The BOLT TD50L has a function for wireless communication with a mobile device (smartphone or tablet) via Wi-Fi.

To enable the wireless module:

- 1. In the main menu, turn on Wi-Fi. See **Main Menu > Wi-Fi** on page 31 for instructions.
- 2. When Wi-Fi is on, the Wi-Fi  icon displays in the status bar.

In the InfiRay Outdoor App:

- 1. Scan one of the QR codes in **Using the InfiRay Outdoor App** on page 28 to download the InfiRay Outdoor App from the App Store or Google Play.
- 2. Open the app and press the **ViewFinder**  icon at the bottom of the screen.
- 3. The ViewFinder screen will prompt the user to: Open the mobile device > Go to device settings > Turn on device Wi-Fi > Connect to Wi-Fi.
- 4. Click the **Connect Device WiFi** button.

On the mobile device:

- 1. Go to **Settings > Wi-Fi**.
- 2. Select the BOLT TD50L from the list of Wi-Fi networks. The BOLT TD50L will appear in the list as “BOLT_XXXXXXX”, where XXXXXXX is the six-digit device serial number. See **Settings Menu > Info** on page 41 for the serial number (SN).
- 3. Enter the Wi-Fi password. The default password is 12345678.
- 4. Press the **Join** button.

When Wi-Fi is successfully connected, the user may manipulate the BOLT TD50L via the InfiRay Outdoor App. See **Using the InfiRay Outdoor App** on page 28.



Firmware Upgrade

When a firmware update is available, it may be sent to the BOLT TD50L through Wi-Fi connection.

To check for and download an available firmware update:

- 1. On your mobile device, go to irayusa.com/fwpc.
- 2. If an update is available for the BOLT TD50L Series, it will be listed at the top of the screen (look for your model number: TD50L).
- 3. Click the available update to download it.
- 4. Confirm you wish to download the file and select where to save the .img file on your mobile device.

To upgrade the BOLT TD50L:


- 1. On the BOLT TD50L, turn on Wi-Fi to connect to the App. See **Main Menu > Wi-Fi** on page 31.
- 2. Open the InfiRay Outdoor App.
- 3. In the App, press the **ViewFinder**  icon at the bottom of the screen.
- 4. Press the **Settings**  icon at top-right.
- 5. Press the **WiFi Firmware Upgrade** button.
- 6. Press the **Choose Firmware** button to browse for the saved .img file on your mobile device.
- 7. Press the **Start Upgrading** button. The app will display the current upload progress. The BOLT TD50L will automatically reboot when the upgrade has completed.




Setting a New Wi-Fi Password and SSID

The Wi-Fi SSID and password for the BOLT TD50L Series can be reset in the InfiRay Outdoor App. The default password is: 12345678.

After connecting with a mobile device:

- 1. Open the InfiRay Outdoor App.
- 2. Press the **ViewFinder**  icon at the bottom of the screen.

3. Press the **Settings**  icon.
4. In the password field, enter the new Wi-Fi password and tap the **Submit** button. The password must be 8–16 numbers/letters.
5. If you also wish to reset the SSID, enter a new Wi-Fi name in the SSID field.
6. Turn off the BOLT TD50L to put the new password (and SSID, if changed) into effect.
7. Wait at least 30 seconds before restarting the device.
8. On the mobile device, go to **Settings > Wi-Fi**, enter the new password, and press the **Join** button.



NOTE: When a factory reset is performed, the Wi-Fi password and SSID are reset to the defaults, 12345678 and BOLT_XXXXXX. See **Settings Menu > Factory Reset** on page 41.

22. USING THE INFIRAY OUTDOOR APP




The BOLT TD50L Series rifle scope supports operation via the InfiRay Outdoor App when the BOLT TD50L is connected via Wi-Fi to a smartphone or tablet. See **Main Menu > Wi-Fi** on page 31.



You can download and install the InfiRay Outdoor App for free via any app store, or by scanning one of the QR codes at right to download the InfiRay Outdoor App from the App Store or Google Play.

When Wi-Fi is connected, users can manipulate the BOLT TD50L via the InfiRay Outdoor App, including:

- Take real-time photos and videos, with or without audio.
- Photos and videos taken via the app are saved to the mobile device, instead of the internal storage of the BOLT TD50L. Once connected, you can access files saved to the mobile device:

- In the App, press the **ViewFinder** icon  at the bottom of the screen.
- Press the photo and video icons at the bottom of the screen to view photos and videos, as well as share, delete, and download files.
- Change the Wi-Fi password and SSID. See **Setting a New Wi-Fi Password and SSID** on page 27.
- Synchronize date and time from the mobile device with the BOLT TD50L:
 - In the App, press the **ViewFinder** icon  at the bottom of the screen.
 - Press the **Settings** icon  at top-right.
 - Click the **Synchronize Time** button.
- Upgrade the firmware. See **Firmware Upgrade** on page 27.

23. DIGITAL ZOOM

The BOLT TD50L Series TD50L uses continuous zoom and can quickly increase the base magnification from 4× to 16× by enlarging the image from 1 to 4 times digitally.



To use digital zoom:



1. From the home screen, rotate the control turret to zoom in and out on the observed object.
 - a. Rotate clockwise to zoom in, counterclockwise to zoom out.
 - b. Each rotation click zooms in / out in increments of 0.4×.
2. The real-time amplification number, 4–16×, appears in status bar.

24. 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.



To activate Picture in Picture (PIP) mode:


1. From the home screen, long press the **Palette**  **Button**.
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 in the status bar.
2. To exit PIP mode, long press the **Palette**  **Button**.

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

25. STADIAMETRIC RANGEFINDER

The BOLT TD50L Series is equipped with a stadiametric rangefinder, which allows you to calculate the approximate distance to an object, if its size is known.

To enter the stadiametric rangefinder on:

1. From the home screen, long press the **Brightness**  **Button**.



When the stadiametric rangefinder is open, two horizontal lines which will be used to measure the target object appear in the center of the screen. Icons for three pre-configured objects and their distance values will be displayed on the right side of the screen.

The pre-configured objects and distance values are:

- Deer: 5.6' Tall
- Hog: 3.0' Tall
- Rabbit: 0.7' (7.9") Tall

To use the stadiametric rangefinder to calculate the size of the observed object:

1. Rotate the **Control Turret** to expand or contract the space between the horizontal lines until they touch the top and bottom edges of the target object.
 - a. Rotate clockwise to expand the space between the lines.
 - b. Rotate counterclockwise to shrink the space between the lines.
2. As you adjust the space between the horizontal lines, the rangefinder values on the right side of the screen are automatically recalculated.

3. Long press the **Brightness**  **Button** to exit the stadiametric rangefinder mode.

NOTES:

- The measurement lines are centered on the reticle, which remains on screen.
- To change the units of measurement (meters or yards), see **Settings Menu > Units of Measure** on page 40.

26. MAIN MENU OPTIONS AND DESCRIPTIONS

Menu, and submenu, options, from top to bottom are:




- **Main Menu:** Wi-Fi, Zeroing Profile, Zeroing, Standby, and Settings.
 - **Zeroing Menu:** The three preset zero distance options.
 - **Zeroing Distance Submenu:** Reticle Zeroing, Custom Zero Distance.
 - **Settings Menu:** Date, Time, Language, Units of Measure, Status Auto Hiding, Factory Reset, and Info.

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

Wi-Fi

Turn Wi-Fi on / off

Turn on Wi-Fi to manipulate the BOLT TD50L via the InfiRay Outdoor App. See **Connecting to Wi-Fi** on page 26.

1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to move through the menu to select the Wi-Fi  menu item.
3. Short press the **Control Turret** to toggle Wi-Fi on / off. Wi-Fi is off by default.
4. When Wi-Fi is on, the Wi-Fi password appears on screen next to the on/off toggle.
5. The Wi-Fi status, on  or off  appears on the right side of the status bar.
6. Long press the **Control Turret** to save and return to the home screen.




Exposure Compensation

Adjust the exposure compensation

The BOLT TD50L Series has an exposure compensation feature to compensate for situations where there is too much light (overexposure) or too little light (underexposure).

If the observed image is too dark, select a positive exposure compensation number. If the image is too bright, select a negative number.



1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to move through the menu to select the exposure compensation  menu item.
3. Short press the **Control Turret** to enter the exposure compensation submenu.
4. Rotate the **Control Turret** to move through the 13 exposure compensation options, -2.0, -1.7, -1.3, -1.0, -0.7, -0.3, +0.0, +0.3, +0.7, +1.0, +1.3, +1.7, +2.0. Five exposure options display on screen at a time. The default is +0.0.
5. Short press the **Control Turret** to confirm the selection and return to the main menu.


Zeroing Profile

Select the zeroing profile

To zero the BOLT TD50L, you must first select a zeroing profile to adjust. Each of the three zeroing profiles, A, B, and C, have three zero distances. These zeroing profiles are displayed in the status bar as A, B and C, with distance selected.



See the **Zero Distance Submenu** and **Reticle Zeroing** on the next page for instructions on customizing the nine zero distances.

1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to move through the menu 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 zero distance

In the zeroing submenus, you can select a preset zero distance, customize a preset zero distance, and adjust the reticle position for the selected zero distance.



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

The BOLT TD50L Series supports custom zeroing distances of 1 to 999 yards or 1 to 999 meters.

1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to move through the menu to select the zeroing  menu item.
3. Short press the **Control Turret** to enter the zeroing submenu. There are three zero distances shown 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 option.
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 $\text{---}\frac{1}{2}\text{---}$ to adjust the X/Y position of the reticle at the selected zero distance. See **Reticle Zeroing** below.
 - b. Customize the selected preset zero distance $\frac{1}{2}00\text{m}$, if desired. See **Customize Zero Distance** on page 36.



ZEROING MENU > ZERO DISTANCE SUBMENU > RETICLE ZEROING $\text{---}\frac{1}{2}\text{---}$

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. See **Zeroing the BOLT TD50L** on page 23 for more information.



1. In the submenu for the selected zero distance, the reticle zero $\text{---}\frac{1}{2}\text{---}$ 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**: Indicates that 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.

To zero your BOLT TD50L, either with a preset zero distance or a customized zero distance (see next section for instructions):

1. Aim and shoot at your target.


2. Keep the reticle centered on the aiming point and long press the **Photo** and **Palette** **Buttons** at the same time to freeze the image. The image freeze icon will appear below the X/Y coordinates in the upper-right corner.



3. 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 back-highlighted blue. The X-Axis is selected by default.
 - b. X (horizontal) is the windage and Y (vertical) is the elevation.
4. 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. Rotate one click to move the reticle in the corresponding direction by 1 pixel. One full rotation (20 clicks) is equivalent to 20 pixels.
- d. When adjusting your zero at a distance of 50 yards, one click will change the impact point by 0.40” as shown in the X and Y coordinate displays. At 100 yards that same click moves 0.80”. At 200 yards one click moves 1.60”.

- e. Changing your zero distance will change the distance of your X/Y adjustments automatically. If your selected zero distance has a correction of 1.60" at 100 yards, it will automatically change to 3.20" if you change the zero distance to 200 yards.
 - f. After moving the reticle, a small white dot appears, indicating the original position of the reticle.
5. Long press **Control Turret** to save the reticle position and return to the home screen; **OR**
 - a. A 5-second countdown appears on the screen, followed by a "Saved Successfully" message.
 6. Short press the **Power**  **Button** to exit the interface without saving the new reticle position.

ZEROING MENU > ZERO DISTANCE SUBMENU > CUSTOMIZE ZERO DISTANCE

Customize a preset zero distance

The BOLT TD50L Series 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 customization  menu item (the selected zero distance will appear instead of "000m").
2. Short press the **Control Turret** to customize the selected preset zero distance. The selected distance is back-highlighted blue and white arrows appear above and below the selected digit to mark the cursor location. The far-left digit is selected by default.
3. Rotate the **Control Turret** to increase or decrease the value of the selected digit, from 0–9.
4. Short press the **Control Turret** to switch between the three digits. The two triangle icons will 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 in the status bar.



Standby


Set automatic standby status and time

The BOLT TD50L may be set to automatically enter standby mode after a specified time with no operation.

1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to move through the menu 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, 10min, 20min, 30min, and off.
5. Short press the **Control Turret** to confirm the selection and return to the main menu.
6. The standby icon  and status (10min, 20min, 30min, or off) appear in the status bar.
7. Once set, the BOLT TD50L will automatically enter standby mode, after the set number of minutes of inactivity, to conserve battery life.
8. When in standby mode, short press the **Power**  **Button** to exit and return to the home screen.



NOTES:

- When **10min**, **20min**, or **30min** is selected:
 - The BOLT TD50L will enter standby mode automatically when the BOLT TD50L 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 TD50L will not enter standby mode while it is in a level position.
- When **off** is selected, standby mode is turned off and the rifle scope will operate until the batteries run out.
- Standby mode may be manually activated from the home screen at any time:
 - Short press the **Power**  **Button** to enter / exit standby and return to the home screen.

Settings ⚙️

Set general settings

1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to move through the menu to select the settings ⚙️ menu item.
3. Short press the **Control Turret** to enter the settings submenu. There are seven submenu items: date, time, language, units of measure, status auto hiding, factory reset, and info.
4. 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 make an adjustment to that menu, and long press to save the adjustment.



SETTINGS MENU > DATE 📅

Set the date

1. In the settings submenu, the date 📅 menu item is selected by default.
2. Short press the **Control Turret** to edit the date. Blue triangle icons will appear above and below the selected date value. The year value is selected by default. The date is displayed in YYYY.MM.DD format.
3. Rotate the **Control Turret** to select the correct value for each digit (year, month, and day).
4. Short press the **Control Turret** to switch between digits. The two triangle icons indicate the selected digit.
5. 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. Blue triangle icons will appear above and below the selected time value. The hour value is selected by default. The time is displayed as HH:MM, in 24-hour format.
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 triangle icons indicate the selected digit.
5. Long press the **Control Turret** to save the time and return to the home screen.



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, English and Russian. English is selected by default.
4. Short press the **Control Turret** to confirm the selection and return to the settings submenu.



SETTINGS MENU > UNITS OF MEASURE 

Select the units of measure

1. In the settings submenu, rotate the **Control Turret** to select the units of measure  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. Meters are selected by default.
4. The selected units of measure (**m** or **y**) will display, along with the selected zero profile and distance, in the status bar.
5. Short press the **Control Turret** to confirm the selection and return to the settings submenu.



SETTINGS MENU > STATUS AUTO HIDING 


Turn auto hiding on / off

This function enables automatic hiding of all interface information, aside from the reticle, 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 show all interface information again.




NOTE: When auto-hide is on, the main menu, when open, will hide after 15 seconds of inactivity and the rest of the BOLT TD50L interface will hide after an additional 8 seconds.

1. In the settings submenu, rotate the **Control Turret** to select the status auto hiding  menu item.
2. Short press the **Control Turret** to enter the auto hiding submenu.
3. Rotate the **Control Turret** to move through the options, on and off. Auto hiding is off by default.
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 TD50L will reboot automatically; **OR**
4. Rotate the **Control Turret** 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:
 - Imaging mode: Day
 - Display Brightness: 3
 - Magnification: 4x
 - Reticle Type: 1
 - Reticle Color: Black
 - Zeroing: A50m (A55y)
 - Wi-Fi: Off
 - Standby: Off
 - Date: 2020:01:01
 - Time: 00:00
 - Language: English
 - Status Auto Hiding: Off
 - Wi-Fi SSID: BOLT_XXXXXX
 - Wi-Fi Password: 12345678

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 information about the BOLT TD50L: GUI version, SYS Info, boot version, FPGA, PN and SN number, hardware version, and FCC ID.
- 3. Long press the **Control Turret** to return to the settings submenu.

27. 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.

28. BASIC MAINTENANCE

Always replace the objective lens cap (15) 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 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 and 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 similar product. Only clean the lens when it is visibly soiled. Frequent wiping or cleaning can degrade the anti-reflective lens coating.

29. 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, neither have we, and 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 modification. Be sure to register your BOLT TD50L Series rifle scope 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, to the address below. iRayUSA will return the product at no cost.

iRayUSA
800 Railhead Road #316
Fort Worth, TX 76106

- The one-week timeline starts from the time of receipt of 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.

30. GENERAL TROUBLESHOOTING

The troubleshooting table on the next page lists issues that may occur when operating the BOLT TD50L Series. Carry out the recommended troubleshooting steps in the order shown in the table. Please contact iRayUSA 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
The BOLT TD50L will not turn on.	The built-in battery pack is very low or has completely discharged.
The BOLT TD50L 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 TD50L 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 TD50L.
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 TD50L and the mobile device.
The image is too dark / too light.	Display brightness level is too low.
	Image is overexposed or underexposed.
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 TD50L is not mounted securely or the mount is not secured on the BOLT TD50L.
The BOLT TD50L will not focus.	Image settings are not optimal for the current environmental conditions or the object being observed.
When the BOLT TD50L is used in low temperature conditions, the image quality of the surroundings is worse than in warm temperature conditions.	Environmental conditions.

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 the Wi-Fi in the main menu. See Main Menu > Wi-Fi on page 31.
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 31.
Move the BOLT TD50L and mobile device to an area with no or fewer Wi-Fi signals.
<ul style="list-style-type: none"> Try again when Wi-Fi signal is stable. Relocate the BOLT TD50L closer to the Wi-Fi signal.
From the home screen, short press the Brightness button to adjust the display brightness.
Adjust the exposure compensation. See Main Menu > Exposure Compensation on page 32.
Adjust the focus on the target by rotating the Objective Lens Focus Ring (14)
Wipe the outside optical surfaces with the included microfiber lens cloth.
<ul style="list-style-type: none"> Wipe the outside optical surfaces with the included microfiber lens cloth. Allow the BOLT TD50L to dry by leaving it in a warm, dry environment for at least 4 hours.
<ul style="list-style-type: none"> Check that the BOLT TD50L has been securely mounted. Make sure you are using the same brand, type, and weight of the bullets as when the BOLT-TD50L and weapon were initially zeroed. If the BOLT TD50L was zeroed in different environmental conditions, a slight shift of the zero is possible.
<ul style="list-style-type: none"> Check the outer surfaces of the objective lenses 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 as for corrective glasses. Adjust the focus on the target by rotating the Objective Lens Focus Ring (14). Adjust the image and device settings. See Quick Start Guide on page 8.
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 riflescope 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.



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