User's Manual

INFIRAY OUTDOOR

BOLT TL35 V2

Bolt Action Optimized Thermal Rifle Scope

Outdoor

W A R N I N G !
ITAR REQUIREMENTS

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

FCC ID: 2AYGT-TL35

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 in this product. This product is not a toy; keep out of reach of children.

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1. OVERVIEW

The InfiRay Outdoor BOLT TL35 V2 was designed for optimal use on any platform that demands flexible mounting options and increased eye relief. In addition to the features found on the original TL35, the TL35 V2 adds several highly requested features including an AMOLED display, audio recording, and laser rangefinder connectivity via Bluetooth. The T-6061 aluminum housing allows mounting with standard 30 mm rings like a traditional day scope. A 50hz 12 µm detector, HD display, and manual focus lens all team up to create an image that's anything but traditional. The TL35 V2 features a dual battery design for 10+ hours of run-time and 32 GB of internal memory to keep your optic going all night.

2. FEATURES

- 12µm high-performance thermal detector
- High-resolution AMOLED display
- Aluminum alloy housing
- Maximum detection range: 1750 yards
- High frame frequency: 50hz
- Multiple zero profiles and ranges
- Stepped digital zoom from 1.0× to 4.0×
- Stadiametric rangefinder
- Dual power supply for extended operation
- Traditional 30 mm diameter housing design
- 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 motion sensor
- Multiple reticle types and color options
- Ultra-Clear mode for advanced image detail
- Picture in Picture (PIP)
- User-friendly interface
- Pixel calibration functions
- Extended eye relief

3. TECH SPECS

BOLT	TL35 V2
SENSOR	
Resolution	384×288
Pixel Size	12 µm
Frame Rate	50hz
Image Processing	MATRIX III
Core	InfiRay Micro II 384
OPTICS	
Objective Lens	35 mm f/1.1
Magnification	3×
Digital Zoom	4×, Stepped
Field of View	7.5° × 5.7°
Detection Range	1750 Yards
Display Type	AMOLED
Display Resolution	1024×768
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	Stadiametric, Bluetooth ILR-1200-1 LRF (Optional/Not Included)
Eye Relief	70 mm
Diopter Range	-4 to +4
ELECTRONICS	
Onboard Recording	Video and Image
Onboard Storage	32 GB
Wireless Connectivity	Video and Image via App, LRF via Bluetooth
Data/Power Connector	USB-C
Power Supply	USB-C External, Built-in Battery Pack (8+ Hours), 18500 Battery (2+ Hours), 18650 Battery (3.5+ Hours)
Start Up Time	<10 Seconds, Instant from Standby
PHYSICAL	
Size	15.74" × 3.34" × 2.55"
Weight	32.87 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

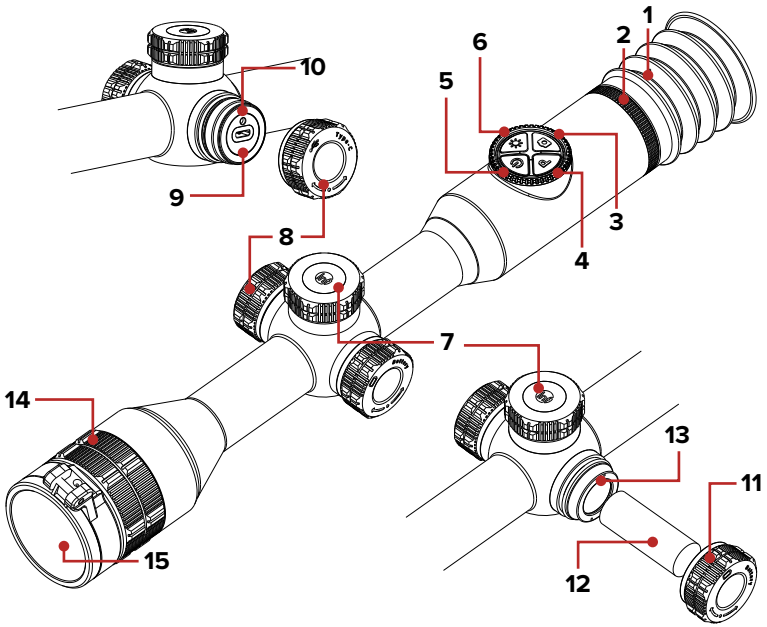
The BOLT TL35 V2 rifle scope ships with everything you need to get out and hunt.

PART NO.	DESCRIPTION
IRAY-AC08	USB-C to Analog RCA/USB Cable 36”
IRAY-AC12	Objective Lens Cap for 35mm BOLT TL35 V2
IRAY-AC18	BOLT Standard Scope Mount Rings
IRAY-AC15	Standard Rubber Eyeguard for BOLT
——	USB Power Adapter
——	Soft Case
——	Lens Cloth
——	User Manual

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

Optional accessories, such as the IRAY-AC96 ILR-1200-1 Bluetooth Laser Rangefinder Module, IRAY-AC30 18500 Battery for BOLT, and IRAY-AC37 18650 Battery Extender, as well as various replacement accessories, including cables and factory mounts are available for purchase. Contact 800-769-7125 or irayusa.com/support.

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. 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 NUC	Power off the device OR enter standby mode
In standby mode	Wake device from standby mode	——
Main menu	Return to previous without saving changes (except on/off toggles)	——
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	——

Palette Button		
Current Screen / Menu	**Short Press**	**Long Press**
Home screen	Switch the color palette	Turn PIP window on / off

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

Photo + Brightness Button +		
Current Screen / Menu	**Short Press**	**Long Press**
Home screen	——	Activate / deactivate the reticle (for at least 15 seconds)
Reticle zeroing interface	——	Return reticle to the center

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	Save changes and exit to home screen	
Defective pixel correction interface	Switch between X and Y	Save changes and exit to home screen	

NOTE: Consult the manual that comes with your ILR-2000-1 Laser Rangefinder Module (optional/not included) for rangefinder shortcuts.

7. QUICK START GUIDE

Step 1: Preparing to Use the BOLT TL35 V2

1. Compare the box contents to the accessories list and examine each for any shipping damage. See **Accessories** on page 4.
2. Check the lens to ensure there are no smudges or dirt present. Clean with the included lens cloth, if necessary.
3. Charge the built-in battery pack before using the BOLT TL35 V2 for the first time. See **Charging the Built-in Battery Pack** on page 10.
4. Install the eyeguard **(1)**.
5. Mount the BOLT TL35 V2 to the weapon using the included 30mm rings. See **Mounting the BOLT TL35 V2** on page 15.

Step 2: Turn On and Adjust the Focus

1. Open the objective lens cap **(15)**.
2. Long press the **Power button** for 3 seconds to power on the TL35 V2. The InfiRay Outdoor 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

The reticle may be inactive when the TL35 V2 is powered on for the first time. To activate the reticle, press and hold the **Brightness** and **Photo Buttons** at the same time for at least 15 seconds.

From the home screen:

1. Short press the **Control Turret** to enter the quick menu (see **Using the Quick Menu** on page 8):
   a. Select the reticle type, from 1–6.
   b. Set the reticle color to white, black, red, or green.

Step 4: Adjust Image Settings

From the home screen:

1. Short press the **Palette Button** to set the color palette to white hot, black hot, red hot, color, or highlight.
2. Short press the **Brightness Button** to adjust the screen brightness, from 1–5. The screen brightness icon and selected brightness level appear at the bottom of the screen.
3. Short press the **Control Turret** to enter the quick menu to adjust the image sharpness, from 1–5. See **Using the Quick Menu** on page 8.
4. Rotate the **Control Turret** to zoom in and out on the observed object. See **Digital Zoom** on page 26.
5. Long press the **Palette Button** to turn on the PIP window. See **Picture in Picture (PIP)** on page 26.
6. Short press the **Power Button** to perform a manual non-uniformity correction, as needed. See **Non-Uniformity Correction (NUC)** on page 22.
7. Long press the **Control Turret** to enter the main menu to turn on Ultra-Clear mode to enhance the image contrast in inclement weather. See **Ultra-Clear Mode** on page 27.

Step 5: Adjust Rifle Scope Settings

1. From the home screen, long press the **Control Turret** to enter the main menu to:
   a. Change the non-uniformity correction (NUC) mode to automatic, manual, or background. See **Main Menu** > **Calibration** on page 30.
   b. Turn on the digital compass. See **Main Menu** > **Compass** on page 30.
   c. Turn on the motion sensor. See **Main Menu** > **Motion Sensor** on page 31.
   d. Set the zeroing profile to A, B, or C. See **Main Menu** > **Rifle Selection** on page 32.
   e. Calibrate the digital compass. See **Main Menu** > **Compass Calibration** on page 38.
   f. Set the date and time. See **Settings Menu** > **Date** and **Settings Menu** > **Time** on page 39.
   g. Set the units of measurement to meters or yards. See **Settings Menu** > **Units of Measure** on page 40.

Step 6: Zero the TL35 V2

1. Zero the rifle scope following the instructions in **Zeroing the BOLT TL35 V2** on page 21.
   a. Select, or customize, a preset zero distance that matches the target distance. See **Reset Zeroing Distance Menu** > **Zero Distance Submenu** on page 32.
   b. Zero the reticle. See **Reset Zeroing Distance Menu** > **Reticle Zeroing** on page 33 for detailed reticle zeroing menu instructions.

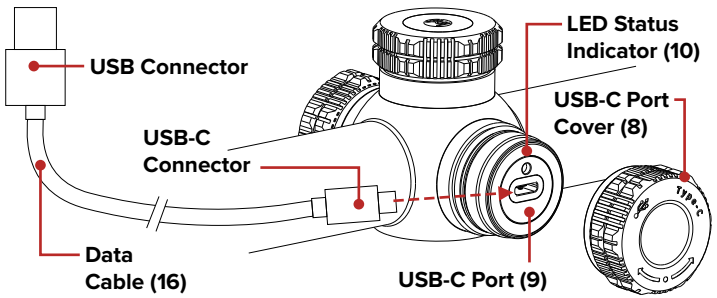
8. CHARGING THE BUILT-IN BATTERY PACK

The BOLT TL35 V2 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 8 hours out of the box and 10+ 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 **(16)** 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/computer; **OR**
   b. A 5V–2A USB power adapter and plug the power adapter into an electrical outlet.
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.
   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 TL35 V2 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.
- 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.

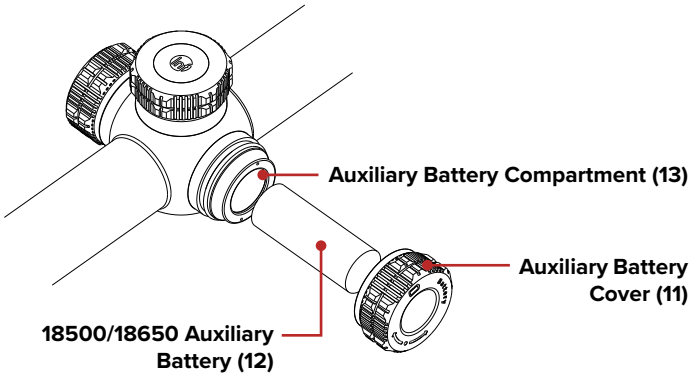
9. INSTALLING AN AUXILIARY BATTERY

The optional auxiliary battery compartment allows the run-time of the TL35 V2 to be expanded to 10+ hours. 18500, or 18650 with adapter, rechargeable li-ion batteries (optional/not included) are compatible with the TL35 V2.

Ensure the 18500/18650 auxiliary battery is fully charged before using with the TL35 V2 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.

10. REMOVING AN AUXILIARY BATTERY

To remove an auxiliary battery from the TL35 V2:

1. Remove the auxiliary battery cover **(11)** by turning it counterclockwise.
2. Pull the auxiliary battery out.

11. BATTERY STATUS ICONS

The battery status icon for the built-in battery pack appears on the right side of the status bar at the top of the screen. If an optional auxiliary battery is installed, a status icon for the auxiliary battery appears to the left of the icon for the built-in battery.

The battery status icon for the active battery (the battery currently being used to power the TL35 V2) 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.

When charging the built-in battery via the USB-C port, the charging icon appears in the status bar in place of the normal battery status 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 promptly
	Charging Icon	The battery is charging (external power supply or computer is connected via the data cable)
	Inactive Battery	Status of the inactive battery

12. SWITCHING THE BATTERY POWER SUPPLY

The BOLT TL35 V2 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 TL35 V2.

Using with the Optional Auxiliary Battery

- When both the built-in battery pack and the auxiliary battery are fully charged, the TL35 V2 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 TL35 V2 will automatically switch to the built-in battery pack as its primary power supply. Operation will not be interrupted during this time.
- When the TL35 V2 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 TL35 V2, via the USB-C port, to a computer or external power source (such as a standard electrical 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.

When charging the built-in battery via the USB-C port, the charging icon appears in the status bar in place of the normal battery status icon. See **Battery Status Icons** on the previous page.

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

13. BATTERY SAFETY WARNINGS

WARNING: Only use the USB charging/data cable provided in the kit to charge the built-in battery pack.

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 TL35 V2 unattended while charging the battery pack.
- 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 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.
- 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 32°F to 113°F; otherwise, the service life of the battery may be reduced.
- The recommended operating 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.

14. EXTERNAL POWER SUPPLY

The BOLT TL35 V2 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 TL35 V2 to an external power supply:

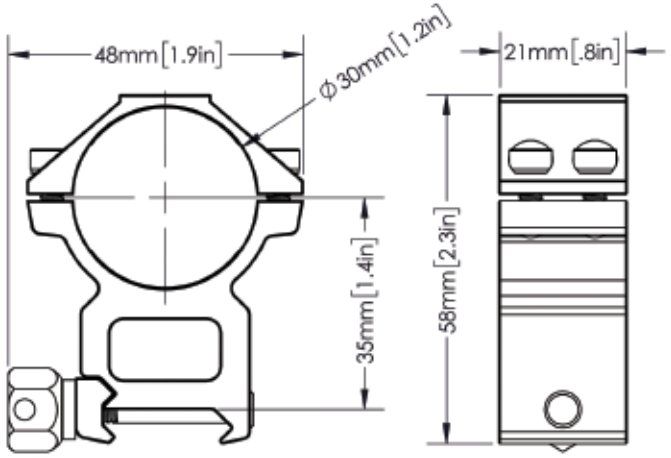
1. Remove the USB-C port cover **(8)** by turning it counterclockwise.
2. Connect the smaller USB-C end of the data cable to the USB-C port **(9)**.
3. Connect the standard USB end of the data cable to the external power supply. The TL35 V2 will automatically switch to using the external power supply for power and it will begin charging the internal battery pack.
    a. While charging, the charging icon will appear instead of the built-in battery's standard 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 disconnected, the TL35 V2 will switch to the auxiliary battery without turning off.
5. If no auxiliary battery is installed or the auxiliary battery level is low, the TL35 V2 will switch to the built-in battery pack, instead of shutting down.

NOTE: Do not connect the TL35 V2 to an external device with a power supply that exceeds the 3.0 USB cable.

15. MOUNTING THE BOLT TL35 V2

To ensure accurate results, please first properly mount the BOLT TL35 V2 on your rifle.

The TL35 V2 rifle scope is mounted using traditional 30 mm 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 TL35 V2 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 rifle scope 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 TL35 V2, zero the rifle scope. See **Zeroing the BOLT TL35 V2** on page 21 for instructions.

16. 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.

Shortcut Buttons

The BOLT TL35 V2 is operated via four control buttons 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.

Power On / Starting

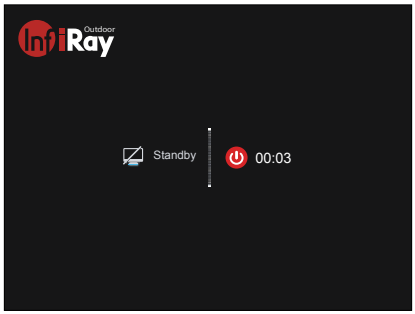
1. Open the objective lens cap **(15)**.
2. Long press the **Power button** for 3 seconds to turn on the rifle scope. The InfiRay Outdoor logo will appear.

To determine the current battery charge, check the battery status icon on the right side of the status bar. See **Battery Status Icons** on page 12.

Powering Off / Stopping

To power off the TL35 V2:

1. Long press 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.
3. "Data saving..." appears onscreen and the TL35 V2 will shut down automatically after saving.



NOTE: Releasing the **Power Button** at any time during this shutdown cycle will stop the shutdown process and the rifle scope will enter standby mode. Short press the Power button to exit standby mode.

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

STANDBY MODE

Standby mode may be activated to conserve battery life. When in standby mode, short press the **Power Button** to exit standby and return to the home screen.

Set the TL35 V2 to Automatically Enter Standby Mode

In the main menu, the TL35 V2 may be set to automatically enter standby mode after a specified length of inactivity (2, 4, or 6 minutes).

1. In the main menu, select the desired standby time, 2, 4, or 6 minutes. See **Main Menu** > **Standby Settings** on page 35 for instructions.
2. The standby icon and status (2min, 4min, 6min, or off) appear on the right side of the status bar.
3. Once set, the TL35 V2 will automatically enter standby mode, after the set length of inactivity, to conserve battery.

NOTES:

- When **2min**, **4min**, or **6min** is selected:
  - The TL35 V2 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 TL35 V2 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 battery runs out.

Manually Enter Standby Mode

The user may enter standby mode manually at any time.

1. From the home screen, long press the **Power Button** to enter the standby screen.
2. Release the **Power Button** before the 3-second countdown finishes to enter standby.

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 onscreen is clear.
2. Look closely to ensure all screen icons, 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 the initial adjustment, there is no need to rotate the eyepiece adjustment ring **(2)** for long distances or other conditions.
- If necessary during standard use, the objective lens focus ring **(14)** may be rotated to adjust fine focus on the target object being observed. See **Focusing the Objective Lens** on the next page.

FOCUSING THE OBJECTIVE LENS

To adjust the focus on the target object:

1. Rotate the objective lens focus ring **(14)** left or right to adjust fine focus on the target object being observed.

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

Activate / Deactivate the Reticle

The reticle may be inactive when the TL35 V2 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 **Photo Buttons** at the same time for at least 15 seconds.

Status Bar Overview

The status bar at the top of the screen shows information on the operating status of the BOLT TL35 V2.

1 **Color Palette:** Shows the set color palette, white hot, black hot, red hot, color, and highlight. White hot 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 **Ultra-Clear Mode:** Shows the Ultra-Clear status, on or off. Ultra-Clear mode is off by default.

4 **Total Magnification:** Shows the real-time amplification, 3.0–12.0×.

5 **Non-Uniformity Correction (NUC) Mode:** Shows the non-uniformity correction (NUC) icon and selected mode, automatic **(A)**, manual **(M)**, and background **(B)**. Automatic is selected by default. A countdown timer will appear instead of the NUC mode when 5 seconds remain until an automatic NUC.

6 **Compass:** Shows the digital compass when turned on.

7 **Standby:** Shows standby icon and status (2min, 4min, 6min, or off). Standby is off by default.

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). Bluetooth is off by default. The vertical battery icon indicates the current battery level of the laser rangefinder module.

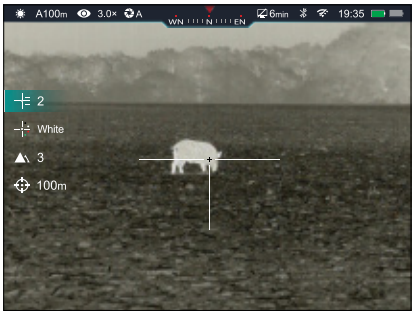
9 **Wi-Fi:** Shows the Wi-Fi status, on or off. Wi-Fi is off by default.

10 **Time:** Shows the current time in 24-hour format.

11 **Auxiliary Battery Status Indicator:** Shows the battery status of the rechargeable auxiliary battery. When the TL35 V2 is receiving power from the auxiliary battery, the battery indicator is in color; when inactive, the battery indicator is gray.

12 **Built-in Battery Status Indicator:** Shows the battery status of the built-in battery pack. When the TL35 V2 is receiving power from the battery pack, the battery indicator is in color; when inactive, the battery indicator is gray.

Using the Quick Menu



In the quick menu, the reticle type and color, image sharpness, and zero distance may quickly be adjusted.

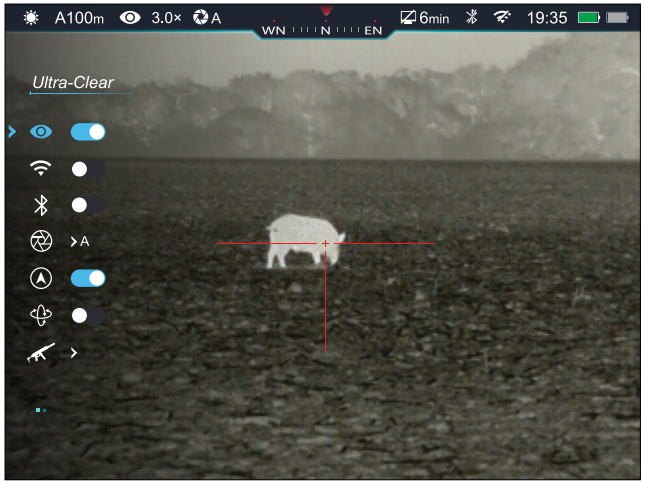
1. From the home screen, short press the **Control Turret** to enter the quick menu.
2. Rotate the **Control Turret** to switch between quick menu items, described below. The selected menu item is back-highlighted in blue.
   a. **(Reticle Type):** Short press the **Control Turret** to change reticle type, from 1–6. The default is reticle type 1. The reticle changes as the cursor moves through the reticle types. See **Reticle Types** below.
   b. **(Reticle Color):** Short press the **Control Turret** to set the reticle color to white, black, red, or green. The default color is black. The reticle changes as the cursor moves through the color options.
   c. **(Image Sharpness):** Short press the **Control Turret** to change the image sharpness level, from 1–5. The default level is 3.
   d. **(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 in the status bar.
3. Long press the **Control Turret** to save changes and exit the 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, long press the **Control Turret** to enter the main menu.



In all menu interfaces:

- Menu icons and text turn blue to mark the current selection and location of the cursor in the main menu.
- 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 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 TL35 V2 is turned off). After restarting the TL35 V2 and entering the menu, the cursor position will once again be at the first menu item.

17. ZEROING THE BOLT TL35 V2

The BOLT TL35 V2 features a “freeze” zeroing method. To zero the TL35 V2:

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** > **Rifle Selection** on page 31.
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 TL35 V2 supports custom zeroing distances of 1 to 999 meters or 1 to 999 yards. See **Reset Zeroing Distance Menu** > **Zero Distance Submenu** on page 32.
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. **Reset Zeroing Distance Menu** > **Reticle Zeroing** on page 33.
10. In the submenu for the selected zero distance, center the reticle 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.
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 33.

18. 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 TL35 V2 is powered on.

The TL35 V2 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 30.

Automatic Mode

In automatic mode **(A)**, the TL35 V2 will perform a NUC automatically according to the internal software algorithm. There is no need to close the objective lens cap **(15)** as the TL35 V2's internal shutter covers the sensor.

A countdown timer will appear in the status bar instead of the calibration mode when 5 seconds remain until an automatic NUC is performed. The timer will appear only after the microbolometer temperature has stabilized—after approximately 10 minutes of continuous operation of the TL35 V2.

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 **(15)** 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 **(15)**.

To perform a background NUC while in background mode:

1. Close the objective lens cap **(15)**.
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 4 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.

19. PHOTOGRAPHY AND VIDEO RECORDING

The BOLT TL35 V2 is equipped with video recording and image capture. All videos and photos are automatically saved to the TL35 V2's built-in 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 39. Alternatively, the date and time may be synchronized with one button in the InfiRay Outdoor App.

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 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, 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. During video 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. Only the reticle appears in recorded photos and video; the user interface (status bar and menu) is not captured.
- Recorded photos are saved to the internal memory card in .jpg format, videos are saved in .mp4 format.
  - Photos are saved in IMG_HHMMSS_XXX.jpg format.
  - Videos are saved in VID_HHMMSS.mp4 format.
  - HHMMSS is hour/minute/second.
  - XXX is a 3-digit counter number.
- The counter used for multimedia file names cannot be reset.
- If a file is deleted from the internal memory, its counter number is not taken by another file.

CAUTION:

- The maximum duration of a recorded video file is 5 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 on the internal storage card regularly and transfer video footage and images to other storage media to free up space on the memory card.

20. ACCESSING INTERNAL MEMORY

When the BOLT TL35 V2 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 TL35 V2.
2. Connect the smaller USB-C end of the data cable to the USB-C port **(9)** on the TL35 V2.
3. Connect the larger USB end of the data cable to your computer.
4. Double-click **My Computer** on your computer desktop.
5. Double-click to open the device named **InfiRay**.
6. Double-click to open the device named **Internal Storage** 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.

21. USING THE INFIRAY OUTDOOR APP

The BOLT TL35 V2 can be operated using the InfiRay Outdoor App when the rifle scope is connected to a smartphone or tablet via Wi-Fi.

Download on the App Store

GET IT ON Google Play

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 TL35 V2 to Wi-Fi:
   a. In the main menu, turn on Wi-Fi. See **Main Menu** > **Wi-Fi** on page 29 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 TL35 V2 from the list of Wi-Fi networks. It will appear in the list as “Infiray-TUBE-XXXXXX”, where XXXXXX 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 TL35 V2 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 TL35 V2.
   e. Update the TL35 V2 firmware.

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

22. DIGITAL ZOOM

The BOLT TL35 V2 uses stepped zoom and can quickly increase the base magnification from 3.0× to 12.0× 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 and counterclockwise to zoom out.
   b. Each rotation click zooms in / out in increments of 0.3×.
2. The real-time amplification number, 3.0× – 12.0×, appears on the left side of the status bar.

23. 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 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 real-time amplification number shown on the left side of 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 magnified via digital zoom, the PIP image will enlarge accordingly.

24. 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 page 29.

25. BLUETOOTH LASER RANGEFINDER

The BOLT TL35 V2 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.

When the optional ILR-1200-1 is connected to the TL35 V2 via Bluetooth, the stadiametric rangefinder is unavailable.

26. STADIAMETRIC RANGEFINDER

The BOLT TL35 V2 is equipped with a stadiametric rangefinder which allows the user to calculate the approximate distance to an object if its size is known.

To enter the stadiametric rangefinder:

1. From the home screen, long press the **Brightness** ✳ **Button**.
2. The stadiametric rangefinder interface has the following features:
   1 **Stadia Lines:** The two horizontal lines in the center of the screen can be adjusted to measure the size of the target object.
   2 **Icons and Distances:** Icons and distance values for three pre-configured objects will be displayed on the right side of the screen. The pre-configured objects are Deer: 5.6' tall, Hog: 3.0' tall, and Rabbit: 0.7' (7.9") tall.

Calculate the approximate distance of the observed object:

3. 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.
   c. As you adjust the space between the horizontal lines, the rangefinder distance values on the right side of the screen are automatically recalculated.
4. Long press the **Brightness** **Button** to exit the stadiametric rangefinder mode.

NOTES:

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

27. MAIN MENU OPTIONS AND DESCRIPTIONS

Menu and submenu options, from top to bottom are:

- **Main Menu:** Ultra-Clear, Wi-Fi, Bluetooth, Calibration, Compass, Motion Sensor, Rifle Selection, Reset Zeroing Distance, Standby Settings, Laser Calibration, Pixel Defect Correction, Compass Calibration, Settings.
  - **Reset Zeroing Distance Menu:** Three preset zero distances.
    - **Zeroing Distance Submenu:** Reticle Zeroing, Custom Zero Distance.
  - **Settings Menu:** Date, Time, Language[1], Units of Measure, Status Auto Hiding, Factory Reset, Info.

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

1. English is the only language available.

Ultra-Clear

Turn Ultra-Clear mode on / off

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

1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to move through the menu to select the Ultra-Clear menu item.
3. Short press the **Control Turret** to turn Ultra-Clear on / off. Ultra-Clear is off by default.
4. The Ultra-Clear status, on or off, appears on the left side of the status bar.
5. Long press the **Control Turret** to return to the home screen.

NOTE: When Ultra-Clear mode is turned on and off, the TL35 V2 will automatically perform a shuttered non-uniformity correction.

Wi-Fi

Turn Wi-Fi on / off

Turn on Wi-Fi to manipulate the TL35 V2 via the InfiRay Outdoor App.

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 turn Wi-Fi on / off. Wi-Fi is off by default.
4. The Wi-Fi status, on or off, appears on the right side of the status bar.
5. Long press the **Control Turret** to return to the home screen.

Bluetooth

The Bluetooth function of the BOLT TL35 V2 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.

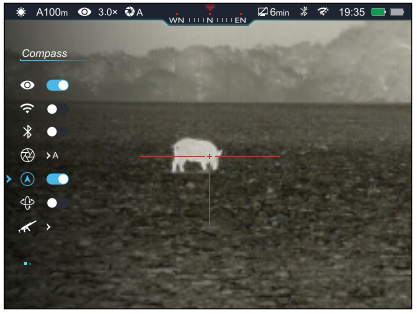
Calibration

Select non-uniformity correction mode

The BOLT TL35 V2 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 move through the menu 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). Automatic (A) is selected by default.
5. The selected NUC mode, A, M, or B, appears on the left side of the status bar.
6. Long press the **Control Turret** to confirm the selection and return to the home screen.

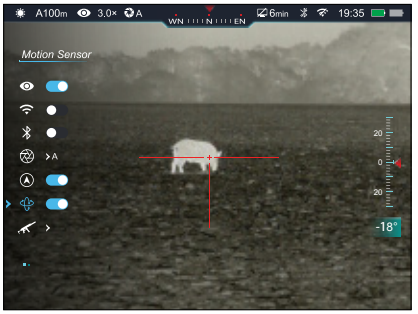
Compass



Turn the digital compass on / off

1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to move through the menu to select the compass menu item.
3. Short press the **Control Turret** to turn the digital compass on / off. The digital compass is off by default.
4. When the compass is on, it appears in the center of the status bar.
5. Long press the **Control Turret** to return to the home screen.

Motion Sensor

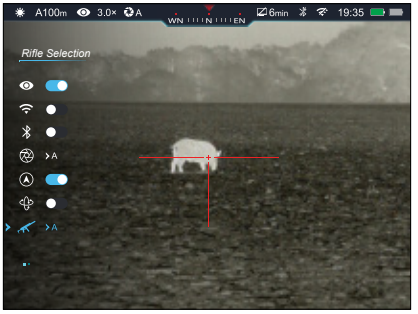


Turn the motion sensor on / off

1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to move through the menu to select the motion sensor menu item.
3. Short press the **Control Turret** to turn the motion sensor on / off. The motion sensor is off by default.
4. When the motion sensor is on, the pitch angle appears on the right side of the screen and the tilt angle appears on the left side of the screen.
5. Long press the **Control Turret** to return to the home screen.

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

Rifle Selection



Select the zeroing profile

1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to move through the menu to select the rifle selection menu item.
3. Short press the **Control Turret** to enter the submenu.
4. Rotate the **Control Turret** to move through the rife zeroing profile options, A, B, and C. The default is A.
5. The selected rifle zeroing profile, A, B, or C, appears on the left side of the status bar.
6. Long press the **Control Turret** to confirm the selection and return to the home screen.

Reset Zeroing Distance

Select or customize zero distance

In the reset zeroing distance menu, you can select a preset zero distance, customize a preset zero distance, and adjust the reticle position for the selected zero distance. The TL35 V2 supports custom zero distances of 1 to 999 yards or 1 to 999 meters.

NOTE: Before selecting or customizing a zero distance, you must select a rifle zeroing profile, A, B, or C. See **Main Menu** > **Rifle Selection** on the previous page.

1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to move through the menu to select the reset zeroing distance 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 100m

Select or customize a preset zero distance

1. In the zero distance submenu, 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, as needed. See **Zeroing Menu** > **Customize Zero Distance** on page 34.

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. Refer back to **Zeroing the BOLT TL35 V2** on page 21, if necessary.

1. In the submenu for the selected zero distance, the reticle zeroing 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 the center of the 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 **Photo** and **Palette** **Buttons** 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 toggle between X and Y. The selected axis is indicated by blue text. X is selected by default.
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 0.15” as shown in the X and Y coordinate displays. At 100 yards that same click moves 0.31”. At 200 yards one click moves 0.62”.

g. Changing your zero distance will change the distance of your X/Y adjustments automatically. If your selected zero distance has a correction of 1.70” at 100 yards, it will automatically change to 3.39” if you change the zero distance to 200 yards.

6. Short press the **Power** **Button** to clear the reticle position and exit the reticle zeroing interface; **OR**
7. Long press the **Control Turret** to save the reticle position and return to the home screen.
   a. 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.

ZERONING MENU > ZERO DISTANCE SUBMENU > CUSTOMIZE ZERO DISTANCE 000

Customize a preset zero distance

The BOLT TL35 V2 supports custom zero distances of 1 to 999 yards or 1 to 999 meters.

1. In the zero distance submenu for the selected zero distance, the reticle zeroing menu item is selected by default. Rotate the **Control Turret** to move to the zero distance you wish to customize.
2. Short press the **Control Turret** to customize the zero distance. White triangle icons will 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.

NOTE: A red warning icon appears to the right of the zero distance if the value entered is 000.

4. Short press the **Control Turret** to switch between the three digits. The two triangle 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 Settings

Set the rifle scope to enter standby automatically

To conserve battery, the TL35 V2 may be set to automatically enter standby mode after a specified length of inactivity (2, 4, or 6 minutes).

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, 2min, 4min, 6min, or off. Standby is off by default.
5. The standby icon and selected status (2min, 4min, 6min, or off) appear on the right side of the status bar.
6. Long press the **Control Turret** to confirm the selection and return to the home screen.
7. When 2, 4, or 6 minutes is selected, the TL35 V2 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.

NOTES:

- When **2min**, **4min**, or **6min** is selected:
  - The TL35 V2 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 TL35 V2 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 battery runs out.
- Standby mode may be manually activated from the home screen at any time:
  - From the home screen, long press the **Power** **Button** and release the button before the 3-second countdown finishes to enter standby mode.
  - Short press the **Power** **Button** to exit standby and return to the home screen.

Laser Calibration

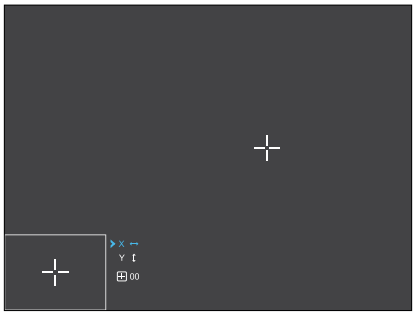
The laser rangefinder function of the BOLT TL35 V2 requires an IRAY-AC96 ILR-1200-1 Laser Rangefinder Module (optional/not included). Please consult the documentation included with your ILR-1200-1 for more information on its operation.

Pixel Defect Correction

Select and correct defective pixels

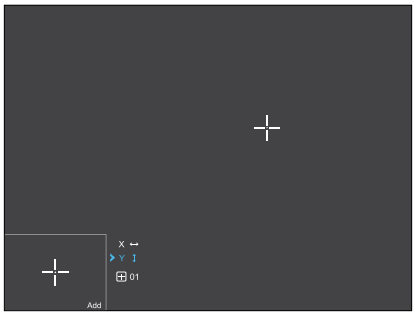
Defective pixels are pixels that do not change correctly compared to the other image pixels—they are either brighter or darker than surrounding pixels. The BOLT TL35 V2 has a tool that corrects defective pixels on the sensor using its internal software.

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



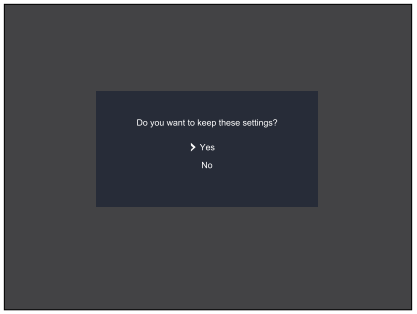
   1 **Cursor:** A cursor appears in the center of the screen in place of the reticle. Move the cursor to the position of the defective pixel.
   2 **X:** Select to move the cursor horizontally.
   3 **Y:** Select to move the cursor vertically.
   4 **PIP Window:** The Picture in Picture window appears in the lower-left corner.
   5 **00:** Shows the number of defective pixels in the “to be corrected” list.

5. Select the axis (X or Y) along which to move the cursor:
   a. Short press the **Control Turret** to toggle between X and Y. The selected axis is indicated by blue text. X 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 reticle 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.

12. A popup window shows the message “Do you want to keep these settings?” and two options, Yes and No. Yes is selected by default.



13. Short press the **Control Turret** to select **Yes** to correct the saved list of defective pixels and exit to the home screen.
A 5-second countdown appears on the screen, followed by “Saved Successfully” ; **OR**
14. Rotate the **Control Turret** to move to **No** and short press the **Control Turret** to exit to the main menu without correcting any defective pixels.

NOTES:

- The PIP window and interface controls move to the upper-left corner when the cursor moves into the lower-left corner of the screen.
- After 15 seconds of inactivity, the system will automatically exit the defective pixel interface.

Compass Calibration

Calibrate the digital compass

1. Long press the **Control Turret** to enter the main menu.
2. Rotate the **Control Turret** to move through the menu to select the compass calibration menu item.
3. Short press the **Control Turret** to begin compass calibration. A triaxial coordinate prompt will appear on the screen.

4. Follow the prompt to rotate the TL35 V2 at least 360 degrees along each axis, X, Y, and Z. Rotations must be completed within the 45-second calibration time.
5. After 45 seconds, the calibration is finished and the system will automatically exit to the home screen.

Settings

Adjust the 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.
4. There are seven submenu items: date, time, language, units of measure, status auto hiding, factory reset, and info.

SETTINGS MENU > DATE

Set the date

1. In the settings submenu, rotate the **Control Turret** to select the date menu item.
2. Short press the **Control Turret** to edit the date. White triangle icons will appear above and below the year value. 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 move to indicate the selected digit.
5. Long press the **Control Turret** to save the date.

SETTINGS MENU > TIME

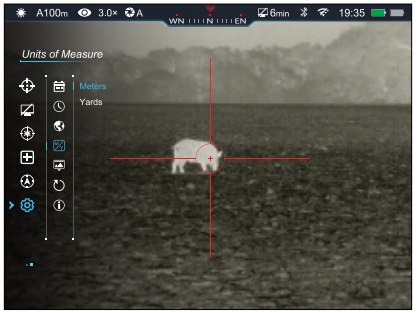
Set the time

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. White triangle icons will appear above and below the hour value. 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 move to indicate the selected digit.
5. Long press the **Control Turret** to save the time.
6. The time appears on the right side of the status bar.

SETTINGS MENU > UNITS OF MEASURE

Set the units of measurement



1. In the settings submenu, rotate the **Control Turret** to select the units menu item.
2. Short press the **Control Turret** to enter the units of measure submenu.
3. Rotate the **Control Turret** to move through the unit options, meters and yards. Meters are selected by default.
4. The selected units, m (meters) or y (yards), 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 menu.

SETTINGS MENU > STATUS AUTO HIDING

Turn status 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. When off is selected, auto-hiding the status bar is turned off.

NOTE: When the menu is open, the status bar will not auto-hide.

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 submenu.
3. Rotate the **Control Turret** to move through status auto hiding options, on and off. Off is selected by default.
4. Short press the **Control Turret** to confirm the selection and return to the Settings menu.

SETTINGS MENU > FACTORY RESET

Restore factory default 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.
3. Two options, Yes and No, appear; Yes will restore factory settings and No will cancel the operation. No is selected by default.
4. Short press the **Control Turret** to confirm cancellation of the factory reset and return to the Settings menu; **OR**
5. Rotate the **Control Turret** to select **Yes** and short press the **Control Turret** to select **Yes** to confirm the factory reset. Factory settings will be restored and the TL35 V2 will reboot automatically.

NOTES:

- There is a pause of about 15 seconds before the factory restart begins. Do not press any buttons during this time.
- A factory reset cannot be undone.
- The settings listed below will be reset to the factory defaults:
  - Color Palette: White hot
  - Display Brightness: 3
  - Image Sharpness: 3
  - Magnification: 3.0×
  - Ultra-Clear mode: Off
  - Wi-Fi: Off
  - Bluetooth: Off
  - Calibration: Automatic
  - Digital Compass: Off
  - Motion Sensor: Off
  - Zeroing Profile: A
  - Reticle Type: 1
  - Reticle Color: Black
  - Standby Settings: Off
  - Date: 2020:01:01
  - Time: 00:00
  - Status Auto Hiding: Off
  - Wi-Fi SSID: Infiray-TUBE-XXXXXX
  - Wi-Fi Password: 12345678

SETTINGS MENU > INFO ⓘ

Show device information

1. In the settings submenu, rotate the **Control Turret** to select the info ⓘ menu item.
2. Short press the **Control Turret** to enter the info submenu.
3. The info submenu will display the following information: the model number, GUI version, SYS Info, boot and FGPA version, PN, and SN numbers, hardware version, and FCC ID.
4. Long press the **Control Turret** to return to the previous menu.

28. 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 should be in working order.

29. 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 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.

30. 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 a modification. Be sure to register your BOLT TL35 V2 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, per the instructions included with the RMA. iRayUSA will return the product at no cost.

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

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

31. GENERAL TROUBLESHOOTING

The troubleshooting table below lists issues that may occur when operating the BOLT TL35 V2. Carry out the recommended troubleshooting steps in the order shown in the table. Please contact iRayUSA at 800-769-7125 or irayusa.com/support or an authorized vendor for assistance before attempting to perform any modifications or repairs beyond the scope of the troubleshooting procedures in this manual. Unauthorized repairs or modifications will void your warranty.

ISSUE	POSSIBLE CAUSES	TROUBLESHOOTING STEPS
The TL35 V2 will not turn on.	The built-in battery pack is very low or has completely discharged.	Charge the built-in battery pack.
The TL35 V2 can not connect to a computer or external power supply.	External power supply has completely discharged.	Check the external power supply and charge it if necessary.
	Computer is turned off.	Power on the computer.
	Data cable is damaged.	Replace the data cable.
The TL35 V2 can not connect to the mobile device (smartphone or tablet).	Wi-Fi is not turned on.	Turn on the Wi-Fi in the main menu. See **Main Menu** > **Wi-Fi** on page 29.
	Wrong Wi-Fi password entered.	On the mobile device, go to **Settings** > **Wi-Fi** and enter the correct password. The default password is 12345678. See **Main Menu** > **Wi-Fi** on page 29.
	Too many Wi-Fi signals near the TL35 V2.	Move the TL35 V2 and mobile device to an area with no or fewer Wi-Fi signals.
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 TL35 V2 and the mobile device.	• Try again when Wi-Fi signal is stable. • Relocate the TL35 V2 closer to the Wi-Fi signal.
The image is fuzzy, not clear, not balanced, with artifacts.	Non-uniformity correction is required.	Perform a non-uniformity correction. See **Non-uniformity Correction** on page 22 and **Main Menu** > **Calibration** on page 30.
The image is too dark.	Display brightness level is too low.	Adjust the display brightness in the quick menu. See **Using the Quick Menu** on page 19.
The GUI is clear, but the image is fuzzy.	The lens is not focused.	• Adjust the focus on the target by rotating the Objective Focus Ring **(14)** • Adjust the image sharpness in the quick menu. See **Using the Quick Menu** on page 19.
	There is dust on the interior or exterior optical surfaces of the lens.	• Wipe the outside optical surfaces with the included microfiber lens cloth.
	There is condensation on the interior or exterior optical surfaces of the lens.	• Wipe the outside optical surfaces with the included microfiber lens cloth. • Allow the TL35 V2 to dry by leaving it in a warm, dry environment for at least 4 hours.

ISSUE	POSSIBLE CAUSES	TROUBLESHOOTING STEPS
The aiming reticle shifts after firing rounds.	The TL35 V2 is not mounted securely or the mount is not secured on the TL35.	• Check that the TL35 V2 has been securely mounted. • Make sure you are using the same brand, type, and weight of the bullets as when the TL35 V2 and weapon were initially zeroed. • If the TL35 V2 was zeroed in different environmental conditions, a slight shift of the zero is possible.
The image of the object being observed is missing.	Looking through glass.	Remove any glass windows from the field of view.
The TL35 V2 will not focus.	Image settings are not optimal for the current environmental conditions or the object being observed.	• 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 Focus Ring **(14)**. • Adjust the image sharpness in the quick menu. See **Using the Quick Menu** on page 19. • Adjust the image and device settings. See **Quick Start Guide** on page 8. • Turn on Ultra-Clear mode. See **Main Menu** > **Ultra-Clear** on page 29.
Image quality is too low or the detection range is reduced.	These issues may occur due to the weather conditions, such as snow, rain, humidity, and fog.	Turn on Ultra-Clear mode. See **Main Menu** > **Ultra-Clear** on page 29.
When the TL35 V2 is used in low temperature conditions, the image quality of the surroundings is worse than in warm temperature conditions.	Environmental conditions.	In warm temperature conditions, objects being observed (surroundings and background) heat up differently because of thermal conductivity, thereby generating a high temperature contrast. Accordingly, image quality produced by the rifle scope 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.

32. NOTES

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