

User's Manual

RUGGED INFRARED COMPACT OPTIC

RICO BRAVO

S E R I E S



iRAYUSA

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TABLE OF CONTENTS

1. OVERVIEW	1
2. FEATURES	1
3. TECHNICAL SPECIFICATIONS	2
4. ACCESSORIES	3
5. COMPONENTS AND CONTROLS	5
6. DESCRIPTION OF CONTROLS	5
7. BATTERY INSTALLATION	7
8. EXTERNAL POWER SUPPLY	8
9. OPERATION	8
10. POWERING ON/OFF	8
11. DIOPTRIC ADJUSTMENT PROCESS	8
12. FOCUSING THE LENS	9
13. QUICK MENU FUNCTION	9
Image Mode	
Display Brightness	
Image Sharpness	
Image Contrast	
14. MAIN MENU FUNCTION	10
Ultra-clear	
Wi-Fi	
Video Out	
Calibration	
Compass	
Gravity Sensor	
Battery Type	
Reticle	
Zeroing Profile	
Pixel Defect Correction	
Compass Calibration	
Settings	
15. STATUS BAR OVERVIEW	15
16. ADVANCED OPERATION	15
Photo Capture and Video Recording	
Zoom	
Standby	
Picture in Picture	
Stadiametric Rangefinder	
Zeroing the Bravo Riflescope	
Status Bar Auto Hiding	
17. BASIC INSPECTION/MAINTENANCE	18
18. UPDATES AND INFRARED OUTDOOR APP.	19
19. WARRANTY	20
20. BASIC TROUBLESHOOTING	21

1. OVERVIEW

The RICO BRAVO is a groundbreaking thermal imaging rifle scope, powered by a 50Hz 12 μm sensor featuring MATRIX III processing for an unmatched viewing experience on its HD Display. Built around iRayUSA's all new Magnetic Omnidirectional Connector, next-gen button concept with tactile ridge positioning and an ultra-rigid, glass filled polymer housing for extra protection in the field, the BRAVO was designed by hunters for hunters. Additional performance based features of the BRAVO include: manual focus lens, multiple dynamic reticles, stadiametric rangefinder, rugged aluminum chassis and RQD quick release mount. To top that all off, the BRAVO was designed and assembled right here in the great state of Texas. Thank-you for being a valued InfiRay customer, be safe and have fun while hunting.

Before using, please read and follow all operation information carefully—especially the details regarding batteries and power modes. It is important to understand and follow all battery and power information and guidelines so your rifle scope functions properly and provides the best thermal imaging results. When not in use, be certain to power off and close the protective lens cap on the front of the unit as well as remove the batteries.

2. FEATURES

- 12μm high resolution thermal detector
- HD Display: 1280x960
- Tactile Ridge Positioning (TRP) button system
- ADM RQD Picatinny Mount
- Ultra Rigid, glass-filled polymer housing
- Sniper Grey finish
- Maximum detection range: 1750 Yards
- Field swappable CR-123A power supply
- High frame frequency: 50Hz
- Digital Zoom: ×1/×2/×3/×4
- Built-in 16 GB storage to support image capture and video recording
- Wireless connectivity for data transfer and real-time streaming via App.
- Digital compass and motion sensor
- Multiple reticle types and color options
- Highlight and Ultra-Clear modes for advanced image detail
- Pixel calibration function
- User friendly interface
- Designed, Engineered and Assembled in Texas.



3. TECH SPECIFICATIONS

BRAVO SERIES		BRAVO 384 35mm
SENSOR		
Resolution	384x288	
Pixel Size	12 μm	
Framerate	50hz	
Image Processing	MATRIX III	
Core	iRay Micro II 384	
OPTICS		
Objective Lens	35mm F1.1	
Magnification	3X	
Digital Zoom	4X, stepped	
FOV	7.5° x 5.7°	
Detection Range	1750 Yards	
Display Type	High-Definition	
Display Resolution	1280x960	
Imaging Modes	White Hot, Black Hot, Red Hot, Color, Highlight	
Reticle Types	7 (2 Dynamic, 5 Static)	
Reticle Colors	Black, White, Red, Green	
Mounting System	Picatinny, MIL-STD 1913 / ADM RQD Mount	
P.I.P.	Yes	
Rangefinder	Stadiametric	
Eye Relief	40mm	
Diopter Range	-4 - +4	
ELECTRONICS		
Onboard Recording	Video and Image	
Wireless Connectivity	video/image via App.	
Data/Power Connector	Magnetic Omnidirectional Connector	
Power Supply	CR123A x2 USB via Magnetic Omnidirectional Connector	
Start Up Time	> 10 Seconds, Instant from Standby	
PHYSICAL		
Size	7.78"×2.79"×3.13"	
Weight	21.2 ounces (with Batteries)	
ENVIRONMENTAL/WARRANTY		
Warranty	5 Years	
Housing Material	Ultra Rigid, Glass-Filled Polymer	
Ingress Protection	IP67	
Operation Temp	-4°F~122°F	
Max. Recoil	1000 g/s ² (300 Win./7mm Mag)	

4. ACCESSORIES:

The BRAVO ships with everything you need to get out and hunt. The items included are:

- Thermal Imaging Riflescope
- ADM RQD Picatinny Mount
- Objective Lens Cap
- MOC to USB Cable
- Hard Case
- Eye Guard
- Manual



Figure 4-1. Product Photo

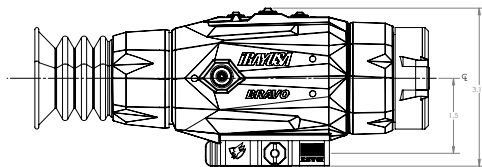
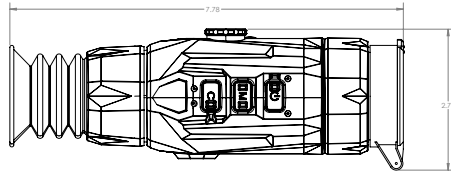


Figure 4-2. Product Dimensions

Optional accessories for the BRAVO series are available to customize your experience and those include:

PART NUMBER	DESCRIPTION
IRAY-AC03	Replacement RQD Quick Release Mount
IRAY-AC04	Replacement MOC cable
IRAY-AC16	Standard Rubber Eye Guard
IRAY-AC17	Objective Lens Cap (46mm)
IRAY-AC20	Shuttered Eye Guard



Figure 4-3. IRAY-AC04



Figure 4-4. IRAY-AC16

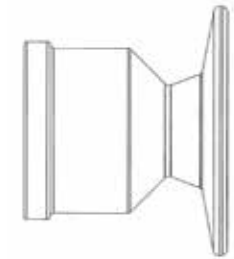


Figure 4-5. IRAY-AC20

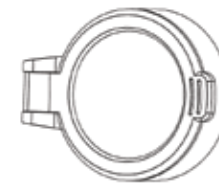
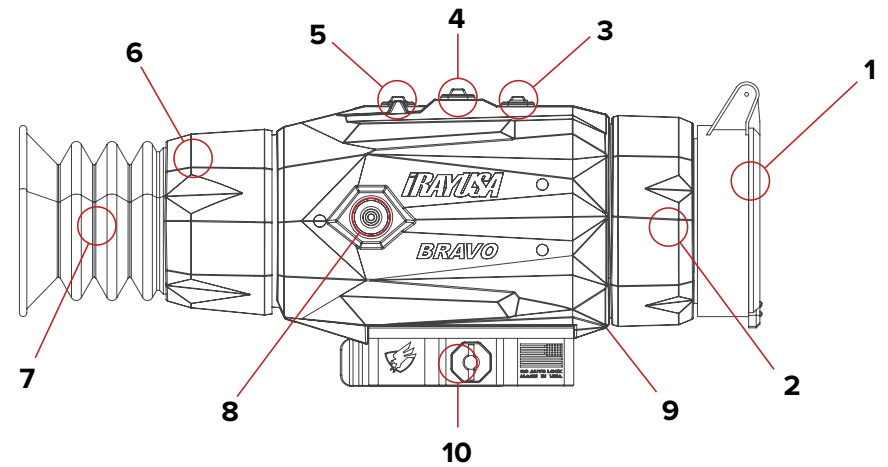


Figure 4-6. IRAY-AC17

5. COMPONENTS AND CONTROLS

- 1 Lens cover
- 2 Lens focus ring
- 3 Power button/Up
- 4 Menu/M button
- 5 Camera button/Down
- 6 Eyepiece adjustment ring
- 7 Eyeguard
- 8 MOC port
- 9 Battery Port
- 10 MIL-STD-1913 ADM RQD Picatinny mount



6. Description of Controls

BUTTON	STATUS/CURRENT OPERATION MODE
POWER BUTTON	Switched off
	Home screen
	Standby mode
	Main menu
	Defective pixel calibration
MENU BUTTON	Switched off
	Home screen
	Standby mode
	Main menu
	Defective pixel calibration
CAMERA BUTTON	Switched off
	Home screen
	Quick menu
	Main menu
	Defective pixel calibration
POWER + MENU	On
CAMERA + MENU	On
POWER + CAMERA	On

SHORT PRESS	LONG PRESS
---	Power on
Zoom increase	Power off
Turn on	---
Move cursor up	---
Move left/up	Jump left/up
---	---
Quick Menu	Main menu
Turn on	---
Select sub-menu	Exit menu
select X(vertical)/Y(horizontal)	Save calibration/exit
---	---
Capture image	Start/Stop video capture
Move cursor down	---
Move cursor down	---
Move down/right	Jump down/right
Standby	Stadiametric Rangefinder
Shutter calibration	Manual calibration
---	Picture in picture

7. BATTERY INSTALLATION

To ensure the BRAVO works properly the correct battery voltage must be selected in the main menu. While the BRAVO is compatible with quality RCR123A rechargeable batteries, their length spec must be no longer than 34mm OAL. RCR123A's with an onboard charging port will be too long and will not work. Published run time is based on primary lithium CR123A batteries, RCR123A's will typically provide less run time, this is not a defect.

DO NOT mix or use different brands of batteries, and DO NOT install and use batteries with different power levels as mixing and using unequal batteries will cause issues with product reliability and operation.

To install batteries into the BRAVO, open the battery compartment cover by turning counterclockwise according to the indicator arrows visible on the cover's knob. Next, note each battery's polarity in the respective battery well and install the batteries correctly as shown in Figure 7.1. Icons inside the battery wells show which polarity goes inside first. After the two batteries have been properly inserted, note the orientation of the battery cap. Place it over the opening and push the battery cover back into position until you hear a "click" to ensure both sides of the cover are installed correctly.



Figure 7-1. Battery Install

SAFETY PRECAUTIONS

Avoid storing the BRAVO with its batteries installed.

Battery capacity or performance may decrease when using the BRAVO in extreme cold, this is normal and should not be considered a defect.

Keep all batteries out of the reach of children.

Discard used batteries properly.

8. EXTERNAL POWER SUPPLY

The BRAVO is designed to also be used with an external power supply, such as a mobile power bank (5V/3A). To use an external power bank, connect the external power supply to the MOC on the BRAVO riflescope using the provided MOC cable. The riflescope will automatically switch from battery power to power from the external power supply. If the external power supply is disconnected, the riflescope will automatically switch over to the internal batteries without powering off.

9. OPERATION

NOTE: The BRAVO has three operating buttons found at these locations on top:

[P] The forward button with an open circle/slash in the middle. In most function this button can be used to move UP in values.

[M] The highest and center button with M in the middle. In most functions this button can be used to move right and advance into menus.

[C] The rear button nearest the eyepiece and has a C in the middle. In most functions this button can be used to scroll DOWN in value.

To aid with quick no-look operation, look at and become familiar with these buttons.

10. POWERING ON/OFF

STARTING/POWERING ON:

To start/power ON the BRAVO from the powered OFF mode, open the protective lens cover at the front of the unit and then press and hold the [P] button (found on the forward area of the control panel on the top) for 2 seconds until the startup screen with an iRayUSA logo appears in the viewfinder. Wait for approximately 8 seconds until the thermal image start-up cycle is complete and an image of the view ahead appears on the viewing screen. Hearing a "clicking" noise is normal during startup process. To determine the amount of power left in the battery at this time, view the battery icon in the upper right corner of the view screen in the Status Bar.

STOPPING/POWERING OFF: To power OFF the BRAVO when the device is ON, press and hold the [P] button for 2 seconds until the countdown number appears in the screen. A timer icon and numbers will appear on the viewing screen. Continue to hold the [P] button down for an additional 3 seconds to complete the shutdown process. Note that releasing the [P] button at any time during this shutdown cycle will stop the shutdown process and the riflescope will resume its normal operation.

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.

11. DIOPTRER ADJUSTMENT PROCESS

To adjust the diopter at the rear of the riflescope to fit your eye and to improve image quality, rotate the eyepiece left or right until you view a clear image. Look closely to ensure all screen symbols, status bar at the top, and the reticle appear sharp in detail and focus. No additional diopter adjustments are required unless the user wishes to make changes.

12. FOCUSING THE LENS

This rifle scope's focus operation is performed by rotating the objective lens adjustment ring (located on the forward area immediately behind the dust cap) until your intended target is in focus on the view screen. Re-adjusting the focus will be needed if the distance to your target changes.

13. QUICK MENU FUNCTION

The basic image settings (including image mode, display brightness, image sharpness and image contrast) can be changed in the Quick Menu.

From the home screen, short press the **[M]** button to enter the Quick Menu. Switch the function items as described below with a short press of Up **[P]** button or Down **[C]** button. The selected item will be highlighted.



IMAGE MODE: short press the **[M]** button to switch image modes among White Hot, Black Hot, Red Hot, Pseudo Color and Target Highlight mode.

DISPLAY BRIGHTNESS: short press the **[M]** button to change brightness level from 1 to 5.

IMAGE SHARPNESS: short press the **[M]** button to switch the image sharpness from 1 to 5.

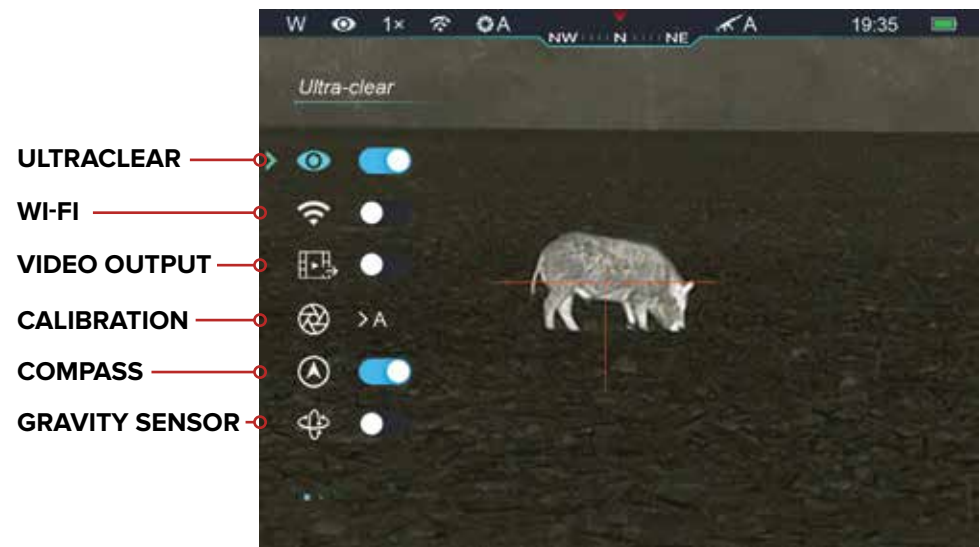
IMAGE CONTRAST: short press the **[M]** button to switch the image sharpness from 1 to 5.

Press and hold down the **[M]** button to save modifications and exit the menu or wait 5 seconds to exit automatically.

14. MAIN MENU FUNCTIONS / INDICATORS

With the power ON, press and hold the **[M]** button to engage the main menu. The menu will be visible in the display on the left of the screen and reveal various modes, from top to bottom: Ultra-clear; Wi-Fi; Video Out; Calibration; Compass; Gravity Sensor; Battery Type; Reticle; Zeroing; Pixel Defect Correction; Compass Calibration and Settings. You can scroll up and down the selection areas by pressing the **[P]** or **[C]** buttons. The area engaged from the displayed menu will be highlighted by a bright BLUE background. Pressing **[M]** button at this time will open the selected function in the indicated area and reveal more details and options for that mode by entering the submenu.

To exit the menu item, press and hold the **[M]** button. This may need to be done more than once to completely exit the menu.



MAIN MENU OPTIONS AND DESCRIPTIONS:

ULTRACLEAR

Turn Ultraclear mode on/off. Press and hold down the **[M]** button to enter the Main Menu. Select the Ultraclear menu option with the Up **[P]**/Down **[C]** button. Turn Ultraclear mode on /off with a short press of **[M]** button, along with the sound of shutter calibration. For optimal Ultraclear performance, set contrast to level 3 or below.

WI-FI

Turn Wi-Fi on/off. Press and hold down the **[M]** button to enter the Main Menu. Select the Wi-Fi menu option with the Up **[P]**/Down **[C]** button. Briefly press of the **[M]** button to turn Wi-Fi on /off

VIDEO OUTPUT

Turn video output on/off. Press and hold down the **[M]** button to enter the Main Menu. Select the Video Output menu option with the Up **[P]**/Down **[C]** button. Briefly press the **[M]** button to turn video out on/off. Video out function will enable connectivity with an external display or recording device, such as a DVR.

CALIBRATION

Select calibration mode

There are three calibration modes: **Automatic (A)**, **Manual (M)** and **Background (B)**. The selected calibration mode is displayed in the status bar (see Status Bar section). Press and hold down the **[M]** button to enter the Main Menu. Select the Calibration menu option with the Up **[P]**/Down **[C]** button. Briefly press the **[M]** button to enter the submenu. Press Up **[P]**/Down **[C]** button to select one of the following modes:

Automatic: The software determines the need for calibration in automatic mode. The calibration process starts automatically.

Manual: The user independently determines the need for calibration based on the quality of the observed image. In Manual Calibration mode, a short press of the **[M]** button and the **[C]** buttons will perform an instant shutter calibration/correction.

Background: The user must close the lens cover before starting the calibration as the calibration will be silent without the shutter. Briefly press **[M]** button to confirm your selection. For background calibration of the viewed area, close the lens cover on the front of the riflescope, press, and hold the **[M]** button and **[C]** buttons simultaneously (NOTE: a prompt will advise to cover the lens during calibration). If you fail to close the lens cap, or cover the lens during calibration, temporary image ghosting will occur until a proper calibration is achieved. Background calibration will start after 2 seconds.

The BRAVO riflescope is factory-set for automatic (**A**) calibration and in this mode the riflescope utilizes the installed software algorithm. An internal shutter covers the sensor during this process and during the automatic calibration process at start-up, a countdown indicator can be seen in the center of the status bar and a 5 second countdown can be viewed. Pressing the **[P]** button will delay a pending correction for approximately 20 seconds.

NOTE: Image degradation is a normal part of the standard operation on a thermal imager, prolonged time between calibrations can lead to unsatisfactory image performance. We recommend a calibration cycle before shooting.

DIGITAL COMPASS

Select digital compass mode

Press and hold down the **[M]** button to enter the Main Menu. Select the Compass menu option with the Up **[P]**/Down **[C]** button. Briefly press the **[M]** button to turn the digital compass on/off. When the compass function is turned on, it will reveal in the center of top status bar.



GRAVITY SENSOR

Turn on/off the gravity sensor

Select the Gravity Sensor menu option with the Up **[P]**/Down **[C]** button. Briefly press the **[M]** button to turn the gravity sensor on/off.

Two scales are displayed on each side of the screen when the gravity sensor is on. The left scale shows tilt angle, and the right shows pitch angle.



BATTERY TYPE

In the Battery Selection option, you can choose from 3V disposable CR123A batteries, or 3.7V rechargeable RCR123A batteries. Incorrect selection will lead to incorrect operation. While the BRAVO is compatible with quality RCR123A rechargeable batteries, their length spec must be no longer than 34mm OAL. RCR123A's with an onboard charging port will be too long and will not work. Published run time is based on primary lithium CR123A batteries, RCR123A's will typically provide less run time, this is not a defect.

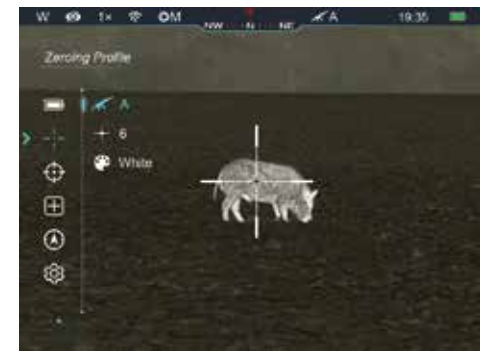
DO NOT mix or use different brands of batteries, and **DO NOT** install and use batteries with different power levels as mixing and using unequal batteries will cause issues with product reliability and operation.



RETICLE

The reticle selection area will provide access to options for: zeroing profile (A, B or C for multiple platforms or ammunition types), reticle style (seven choices) and reticle colors (white, red, green, and black). A reticle must be used to zero the sighting process.

NOTE: Pressing **[P]** + **[C]** buttons simultaneously while pressing the **[M]** button 4 times will turn the reticle function ON or OFF. When the reticle is turned OFF, all reticle functions will also be disabled.



ZEROING

This selection will allow adjustment to your reticle to match your point of impact. A single click will make fine adjustments of .62 MOA, and a long press will make gross adjustments of 6.16 MOA. More information on setting your zero can be found in section 16 (Advanced Operation.) To exit, press and hold down the [M] button to save any changes when done.



PIXLE DEFECT CORRECTION

In the defective pixel calibration interface, short press the Up [P]/Down [C] button to move the reticle up/down or left/right. Short press the [M] button to switch the movement direction between up/down and left/right.

After selecting the defective pixels, press and hold down the [P] and [C] buttons at the same time to perform calibration, and press the [P] and [C] buttons again at the same position for cancellation. The number of the defective pixels calibrated is displayed at the bottom of the screen. Repeat the process until all defective pixels are calibrated, then long press the [M] button to save and exit



COMPASS CALIBRATION

Select the 'Compass Calibration' option by [P] and [C] button, and short press the [M] button to enter the compass calibration interface (as shown in figure 10).

Rotate the device in three axial directions in 30 seconds according to the direction shown on screen to complete the calibration.



SETTINGS

Select the Settings option by [P] or [C] button, and short press the [M] button to bring up information about the date/time, status auto hiding, perform a factory reset, or access system info.

NOTE: It is important to first set this unit's Date and Time settings as these numbers are used to name photographs and videos.

DATE: The top icon in the SETTINGS panel is used to set the date in the BRAVO rifle scope. To reach the DATE icon, press and hold the [M] button to active the main MENU, then use [C] to scroll down through the icons to the SETTINGS menu (a gear icon). Next, press [M] button to enter the SETTINGS submenu. DATE is the top icon appearing as a calendar. Pressing [M] button will turn this number set BLUE and now permit changing these numbers. Two triangle icons will appear above and below the DATE value.



NOTE: The DATE format is displayed as YYYY.MM.DD (example 2021.01.01). Select the correct value for the year, month and date with a short press of the [P] (to move down) and [C] (to move up) buttons. Switch between digits with another short press of the [M] button (center). Save selected date and exit the submenu with a long press of the [M] button.

TIME: Again, after entering the SETTINGS submenu with a press of the [M] button from the MAIN MENU viewed on the left, quickly press and release the [M] button again. In the submenu, press [C] to move down to the clock icon (second from the top), then press [M] button to engage the TIME submenu. Two triangle icons will appear above and below the numbers highlighted in BLUE. Time format is displayed as HH:MM in the 24-hour format (example 14:48 is 2:48PM). Select the correct value for the hour and minute with a short press of the [P] or [C] buttons to scroll up or down. Switch between digits (left or right) with a short press of the [M] button. Save the selected date and exit the submenu with a long press and hold of the [M] button. The arrows will disappear, and the number remains BLUE.



NOTE: Time appears in the STATUS BAR at the top of the screen right of the battery icon.

15. STATUS BAR OVERVIEW



The status bar is at the top of the screen and shows information on the actual operating status of the BRAVO. From left to right the icons are:

- 1 - Current image mode (White Hot; Black Hot; Red Hot; Target Highlighting; Color)
- 2 - Ultraclear Mode (Ultraclear off; Ultraclear on)
- 3 - Current magnification (such as 3.0x)
- 4 - Wi-Fi Status (Wi-Fi off, Wi-Fi on)
- 5 - Calibration Mode - a countdown timer icon will appear instead of the calibration mode with 5 seconds remaining until automatic calibration. The timer will appear only after the microbolometer temperature has stabilized after approximately 10 minutes of continuous operation of the BRAVO. Immediately after turning on the BRAVO the shutter calibration activates automatically without displaying the timer.
- 6 - Compass (when it is on)
- 7 - Zeroing Profile
- 8 - Video output status (when it is on)
- 9 - Time (set clock in the Main Menu, see Section 14)
- 10 - Battery status, indicated by the following:

ICON	COLOR/STATUS	BATTERY STATUS
	Green	>20%
	Red	<20%, replace batteries immediately
	USB	External power supply is attached

16. ADVANCED OPERATION

PHOTO CAPTURE AND VIDEO RECORDING

Short press the [C] button to take a photo. The image will freeze for .5 seconds, and a camera icon will appear in the upper left of the screen when the function performs.

Long press the [C] button to start video recording, the recording time is indicated in the upper right corner. A long press of the [C] button again will exit the recording once complete. Note that the video will not be saved if you skip the exit process and shut down the device suddenly.

An image can be taken while recording with a short press of the [C] button. A camera icon will appear next to the recording time display, and the image will freeze for .5 seconds.

The photos and videos can be read on the computer by USB cable, or accessed wirelessly via the InfiRay Outdoor App.

ZOOM

A short press of the [P] button will activate the digital zoom. The digital zoom is cyclical, pressing the button 4 times will come back to no digital zoom.

NOTE: the total system zoom, optical multiplied by digital, will be shown in the status bar.

STANDBY

Standby mode will put the Bravo Series into a lower power mode to save the battery but will instantly resume operation when needed. To enter standby mode, press the [M] and [P] buttons simultaneously. To resume operation, press the [M] and [P] buttons again, operation will resume instantly.

PICTURE IN PICTURE

To activate Picture in Picture, press and hold the [P] and [C] buttons from the home screen. A 2X zoomed image will appear in the top of the screen. The zoom number that is shown will be 2x of the total zoom shown in the status bar. To exit the PIP mode, press and hold the [P] and [C] buttons to return to the home screen.



STADIAMETRIC RANGEFINDER

To activate the Stadiametric Rangefinder, press and hold the [P] and [M] buttons from the home screen to enter the Stadiametric ranging interface screen. Once engaged, two horizontal lines will appear above and below the cursor. Move the horizontal lines to the target by pressing the [P] or [C] buttons. An icon that is now visible on the left will indicate the approximate distance to the target.



Once your use of the range-finding function is complete, you can exit the mode by pressing and holding the [P] and [M] buttons briefly.

ZEROING THE BRAVO RIFLESCOPE

From a steady platform, shoulder and aim the rifle with the BRAVO installed and take one good shot at your target. Next, make your rifle safe with action open and chamber empty, and observe the location of impact of the bullet on the target.

If the point of impact does not match the point of aim (the center of the reticle), keep the reticle centered on the point of aim, enter the ZEROING MENU, and move the reticle with the UP [P] or DOWN [C] buttons until the reticle matches the point of impact.



Briefly press the [M] button to switch the movement direction between X (elevation) and Y (windage) axis. The cursor will represent the current selected option, and the icon will turn blue. Press the [P] button to move the reticle left or up and the [C] button to move the reticle right or down. When moving the reticle, note that a white dot appears on the screen representing the original position of the reticle, and should remain centered on your original point of aim. When the reticle moves to the point of impact, press and hold the [M] button to save the new position of the reticle and exit to the home screen.

At this time, again from a steady platform, shoulder the firearm, load a round into the chamber, aim from a steady rest and take another shot – the point of impact should now match the point of aim. If not, repeat the process above.

NOTE: During this reticle adjustment process, at native zoom a single button click will make fine adjustments of .62 MOA, and a long press will make gross adjustments of 6.16 MOA. If making adjustments at 100 yards and then moving to 200 yards, the distance of one click on your target will double as MOA is an angular unit of measure. Please keep this in mind when increasing the distance to your target during the zero process. When digital zoom is applied during the zeroing process, adjustments will be decreased to the following:

Zoom Level	CLICK DISTANCE
3X	.62 MOA
6X	.31 MOA
9X	.21 MOA
12X	.15 MOA

STATUS BAR AUTO HIDING

This function enables automatic hiding of all GUI information in the interface, other than the reticle. Turn Status Auto Hiding ON or OFF in the Settings submenu, select the Status Auto Hiding menu option with the up [P] or down [C] buttons. Enter the Status Auto Hiding submenu with a short press of the [M] button. Briefly press the up [P] or down [C] buttons again to select ON or OFF. Confirm your selection with a short press of the [M] button. A submenu exit will take place automatically.



NOTE: When the selection is ON, the GUI icons in the interface, including the status bar at the top of the screen, will automatically be hidden after 8 seconds without any engagement. Only the image and the reticle will be displayed thus providing a full screen view. The GUI information will be displayed again with the press of any button. Only after the GUI is displayed, then the button and menu can be manipulated.

17. BASIC INSPECTION/MAINTENANCE

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

The riflescope 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 lenses. The rechargeable battery should be fully charged. The controls/buttons should be in working order. The mount should be tight and correctly installed on the rail.

BASIC MAINTENANCE

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

Wipe the external surface of metal and plastic parts off dust with a cotton cloth. A blast of air may be used for cleaning process. Clean the electric contacts and battery slots on the riflescope using a non-greasy organic solvent. Check the optics of the lens and the eyepiece. If necessary, remove the dirt and sand from the optics. It is preferred to use a non-contact method. Cleaning of the exterior of the optics should be done with cleaners designed especially for this purpose, such as an optical quality wipe.

18. UPDATES AND THE INFIRAY OUTDOOR APP

You can find detailed instructions at irayusa.com/app

To connect to the InfiRay Outdoor App, you will first need to activate Wi-Fi (see section 14) and connect to your RICO_BRAVO WiFi hotspot.

The default password is 12345678 and the default name will be RICO_BRAVO_ followed by the Serial Number. You can find the SN in the Main Menu->Setting->Info (see page 14).

Once connected you can access files located onboard through the “Remote Files” option. Folders will be named and sorted by date (YYYYMMDD,) files will be named and sorted by time (HHMMSS.) See Section 14 for information on Main Menu->Settings->Date/Time. To download any files to the app, simply select your desired file and hit “download.” Any previously downloaded files will be in the Photos or Videos gallery on the App.

The Wi-Fi name and password of BRAVO Series can be reset in the InfiRay OutdoorApp after connecting with the mobile device, find and click the “setting” icon in the InfiRay Outdoor to enter the setting interface. In the text box, enter and submit the new name (SSID) and password of the Wi-Fi. The Bravo will need to reboot the device to take the new name and password into effect.

Note: When factory Settings are restored, the Wi-Fi name and password are also restored to factory default settings (12345678).



19. 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.

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

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. One week starts from the time of receipt of product at iRayUSA. Customers must ship the product to iRayUSA, iRayUSA will return the product at no cost. No returns will be accepted without an RMA. iRayUSA is not liable for any damages or loss incurred when shipping to iRayUSA

20. GENERAL TROUBLESHOOTING

The table lists problems that may occur when operating the BRAVO series. Carry out the recommended checks and 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 may void your warranty.

SUPPORT/SERVICE: irayusa.com/support
info@irayusa.com
 800-769-7125

FAULT	POSSIBLE CAUSES
The BRAVO will not turn on.	Battery is completely discharged
The BRAVO will not work with an external power supply	USB cable is damaged.
	External power source is discharged.
The image is fuzzy, not clear, not balanced, with artifacts	Calibration is required.
The Image is too dark	Brightness level is too low.
The GUI is clear, but the image is fuzzy.	The lens is not focused.
	There is dust or condensation on the interior or exterior optical surfaces of the lens.
The aiming reticle shifts after firing rounds.	The BRAVO is not mounted securely or the mount is not secured on the BRAVO.
The image of the object being observed is missing.	Looking through glass.
The BRAVO will not focus.	Wrong settings.
The BRAVO can't connect with a smartphone or tablet	Wrong Wi-Fi password.
	Too many Wi-Fi signals around the device.

TROUBLESHOOTING
Charge the battery.
Replace USB cable.
Check the external power source.
Perform image calibration according to the Calibration section of this manual.
Check battery orientation and voltage. Check the voltage of external power supply.
Adjust the image sharpness by rotating the focus knob.
Wipe off the outside optical surfaces with a soft cotton cloth. Let the BRAVO dry by leaving it in a warm, dry environment for 4 hours.
Check that the BRAVO has been securely mounted. Make sure you are using the same brand, type and weight of the bullets as when the BRAVO and weapon were initially zeroed. If your BRAVO was zeroed in different environmental conditions, a slight shift of the zero is possible.
Remove any glass windows from the field of view.
Rotate the focus knob. Adjust the BRAVO according to the Powering On and Image Setting section. 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.
Input correct password.
Move the device to an area with no or fewer Wi-Fi signals.

FAULT	POSSIBLE CAUSES	TROUBLESHOOTING
Wi-Fi signal is missing or interrupted.	Smartphone or tablet is out of range of a strong Wi-Fi signal, or there are obstacles between device and the smartphone.	Try again when Wi-Fi signal is stable.
Image quality is too low or the detection range is reduced.	Environmental conditions.	These problems may occur due to the weather conditions such as snow, rain, humidity, fog etc.
When the BRAVO 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 thermal imager will be higher. In low temperature conditions, the background will cool down to roughly the same temperature, and thus the temperature contrast is substantially reduced and image detail can go down as there is less contrast in the scene. This is a normal function of a thermal imager and is no indicator of actual detector performance.





800 Railhead Road #316

Fort Worth Tx 76106

800-769-7125

682-499-0047

info@irayusa.com