5 YEAR WARRANTY
Thermal Devices

3 YEAR WARRANTY
Digital Devices

CUSTOMER SERVICE

+1 (800) 580-5281
info@rix-nv.com

THERMAL IMAGING BINOCULARS

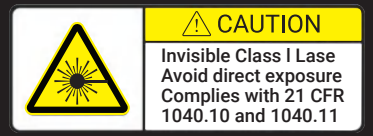
AURORA

SERIES

User Manual v2.0

We deeply appreciate your choice of RIX.
Please read the instruction manual carefully before using this product.
Warm regards and happy hunting!

WARNING!



AURORA Series A3R and A6R features laser rangefinding.

Do not aim the rangefinding laser at an eye directly or by transmitting through a reflective surface (for example, specular reflection).

CE UKCA RoHS FC (FCC ID: 2A7ZZ-2G-00)

TABLE OF CONTENTS

01 PRODUCT OVERVIEW

The AURORA series thermal imager is a handheld thermal imaging device that integrates infrared observation, photographing, video recording, and Wi-Fi connection. With 2.69-inch large size OLED displays and 2.5 times eyepiece, it provides thermal binocular observation while eliminating visual fatigue problems after prolonged exposure, for more comfortable observation. As infrared thermal imaging does not need an external light source and is not affected by intense light illumination, the AURORA series works well in observing targets covered by various obstacles (such as tree branches, tall grass, shrubs) no matter in days with severe weather conditions (rain, snow, fog, haze, etc.) or night. It can be widely used for night hunting, observation and terrain positioning, and search and rescue operations.

02 PRODUCT FEATURES

▸ Extra-large 2.69" display	▸ Digital zoom: 1×/2×/3×/4×
▸ Large eyepiece for comfortable binocular observation	▸ PIP function
▸ High image quality	▸ Built-in Wi-Fi module, mobile application (iOS and Android)
Built-in and external battery, ultra-long battery life	▸ Image enhancement
▸ Built-in 32G storage space, photographing and video recording available	

03 PRODUCT PARAMETERS

- ▸The actual service time depends on the use frequency of photographing, video-recording, Wi-Fi usage, and other functions.
- ▸The weight in the table does not include the external battery.
- ▸The design and software programs may be continuously updated in order to refine the features of the product.
- ▸The technical parameters of the products are subject to change without notice.

Model		A3	A3R	A6R
Detector Parameters	Type	VOx Uncooled		
	Resolution,pixels	384 × 288		640x512
	Pixel, μm	12		
	NETD,mK	＜ 50		＜ 40
	Frame Rate,Hz	50		
Optical Parameters	Objective Lens, mm	35mm; F1.0		50mm; F1.1
	Optical Zoom,x	4 to 16		3.4 to 13.6
	Digital Zoom,x	1 to 4		
	Eye Relief,mm	30		
	Exit Pupil Diameter,mm	80		
	Field of View (H), degrees / yd @100 yd	7.5˚ /13.2yd		8.8˚ /15.4yd
Range Performance	Detection Range, m/yd	1818m/1988yd		2597m/2840yd
Display Screen	Type	OLED		
	Resolution,pixels	768× 576		
	Size,inch	2.69		

Model		A3	A3R	A6R
Battery	Built-in Battery	Lithium-ion battery pack 3800mAh / DC3.7V		
	External Battery	AA batteries ×8		
	Service Voltage	3V~4.2V		
	External Voltage	5V (Type-C USB)		
Laser Rangefinding	Safety Requirement	/	Class 1((IEC:60825-1))	
	Laser Wavelength, nm	/	900-908	
	Measurement Range, m/yd	/	5-1200m/5.5-1312yd	
	Measurement Accuracy, m/yd	/	± 1m/± 1.09yd	
Physical Parameters	Operating Time, h	8(only built-in battery) 24(built-in and external batteries)	8(only built-in battery) 20(built-in and external batteries)	
	Memory Capacity,GB	32		
	Operating Temperature,℉	-4 to +122		
	Weight,lb	1.9		2
	Size,inch	7.9 × 5.9 × 2.4		

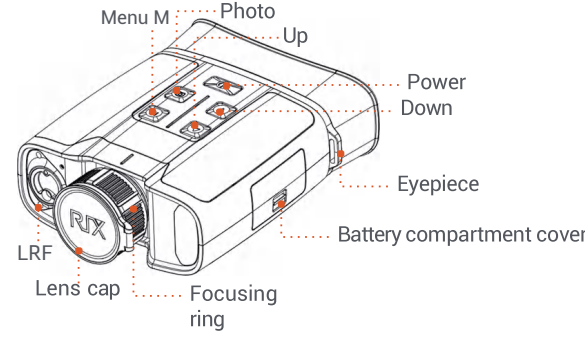
04 PACKAGE CONTENTS

- **AURORA series thermal imaging binoculars**
- **Backband**
- **Data Cable**
- **Portable bag**
- **Lens cleaning cloth**

Note
The box also includes an instruction manual, a quick to use guide, and a thank-you letter.

05 COMPONENTS AND BUTTONS

Note
Only A3R and A6R have LRF.



06 BUTTON OPERATIONS

Button	Status	Press	Press and hold
Power button	Powered off	—	Power on the device
	Home screen	Standby	Power off the device
	Standby mode	Cancel Standby	—
	Main menu screen	Return to the upper menu without saving changes	—
Up button	Home screen	Digital zoom	Turn on/off the PIP function
	Menu screen	Navigate up	—
Menu M button	Home screen	Open the shortcut menu	Go to the main menu
	Shortcut menu screen	Switch and confirm parameters	—
Down button	Main menu screen	Enter the submenu/Switch and confirm parameters	—
	Defective pixel correction screen	Direction switching X/Y	
	Home screen	Enable/disable rangefinding*	Calibration
	Menu screen	Navigate down	—
Photo button	Home screen	Take a photo	Turn on/off the video recording function
	Defective pixel correction screen	Add/delete defective pixels	—

07 POWER SUPPLY

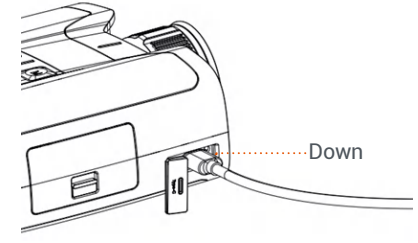
The AURORA series has built-in rechargeable lithium-ion batteries, each with a service life of eight hours. It also supports replaceable AA batteries, and can hold up to eight batteries at a time. Please charge the device before first use.

Note

When this device is charged with the power adapter, only the internal battery is charged, not the external battery. Once four external AA batteries are installed on the same side, the device is ready for use.

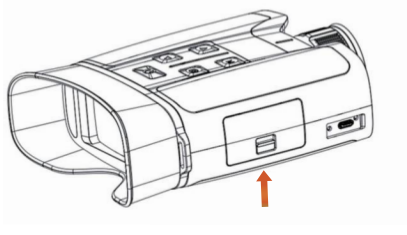
Built-in Battery Charging

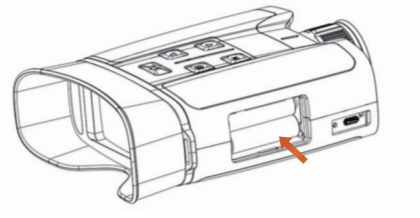
- Open the Type-C cover on the device and connect the Type-C charging cable of the power adapter to the port of the device.
- Plug the power adapter into a 100-240V socket for charging.
- When the power adapter is connected, the LED on the device glows or blinks.
- If the indicator is steady red, the Battery Pack is being charged.
- If the indicator turns green, the Battery Pack is fully charged.
- When charging is complete, unplug the Type-C charging cable and close the Type-C cover.



External Battery Installation

- Push the switch on the battery compartment cover to open the cover.
- Install four AA batteries in order and pay attention to the positive and negative sides.
- After the batteries are installed, push and press the switch to close the battery compartment cover.
- When you need to remove the batteries, you can pull out the cord to eject the batteries.
- Repeat the above steps to install external batteries on the other side.





Safety Precautions

- When not used for a long time, the device needs to be partially charged and should not be fully charged or out of battery.
- When the device is brought from a cold environment to a warm environment, do not charge it immediately. Please wait 30-40 minutes for the device to warm up.
- Avoid leaving the device charging unattended.
- Do not use a damaged or modified charger for charging.
- Charge the device at a temperature between 0°C and 45°C; otherwise, its battery life may be reduced.
- Do not charge for more than 24 hours.
- Do not expose the device to high temperatures or open flames.
- Do not connect with any third-party device that exceeds the rated current.
- Do not disassemble or alter the battery pack without authorization. Do not knock or drop the battery pack.
- When used in sub-zero temperatures, the device may suffer a battery drop, which is normal and not defective.
- Do not use the device at temperatures above 50°C — this may result in reduced battery life.

08 EXTERNAL POWER SUPPLY

The AURORA series can be powered with an external power supply, such as a mobile charge pal.

▸ Connect the external power supply to the Type-C port of the AURORA series.
▸ The device switches to external power supply and its built-in battery pack is charged at the same time.
▸ The battery icon on the display changes to a charging icon.
▸ When the external power supply is disconnected, the AURORA series is still powered on and automatically switches to battery power supply.

09 POWER ON

▸ Remove the lens cap. Press and hold the Power button to power on the device. The Home screen is displayed after several seconds.
▸ Rotate the focusing ring of the objective lens to focus on desired object.
▸ To set the image mode, display brightness, image contrast, and other parameters, refer to the shortcut menu functions in this manual.
▸ After use, press and hold the Power button to shut down the device. A video with the RIX's band is displayed. Release the button after the logo disappears. The thermal imager is now turned off.

10 DIGITAL ZOOM

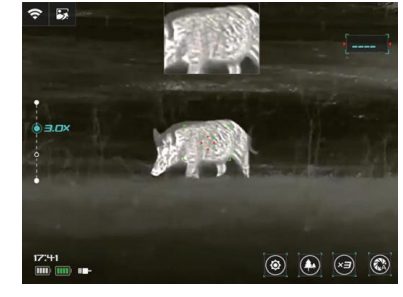
The AURORA series supports quick digital zoom-in of images to increase visual magnification.

▸ On the Home screen, press the Up button circularly to switch between zoom in options (1× to 4×).
▸ The corresponding magnification is displayed in real time on the left side of the display.
▸ For the A3 and A3R, the 1× to 4× zoom options displayed correspond to the visual magnification of 4×,8×,12×, and 16×.For A6R,the visual magnification is 3.4×,6.8×,10.2×,13.6×.

11 PIP FUNCTION

Picture-in-Picture (PIP) provides a floating window independent of the full screen. This window shows part of the image which is enlarged to 2× in a certain area in the upper part of the display of the main image.

▸ On the Home screen, press and hold the Up button to turn the PIP function on/off.
▸ When you press the Up button to enlarge the main image, the image in the PIP window is enlarged by 2 times accordingly. For example, if the main image is enlarged by 1×, 2×, 3×, or 4×, the image in the PIP window will be enlarged by 2×, 4×, 6×, or 8× respectively.



12 PRODUCT RANGEfiNDER

The AURORA A3 model integrates a leading stadiametric rangefinder function, which can estimate the rough distance between you and your prey based on the known heights of targets.

- On the Home screen, press the Down button to turn the stadiametric rangefinder function on/off.
- After this function is enabled, place the target between the curve and the horizontal line.

The approximate distance range is displayed below.

- The preset heights of three targets are:

Deer: 1.7m high **Wild boar: 0.9m** **high Hare: 0.2m high**

- Press the Down button to exit to the stadiametric ranging function.

The AURORA A3R and A6R model has a laser rangefinder function, with a range up to 1300 yards.

- On the Home screen, press the Down button to turn the laser rangefinder function on/off.
- A range indicator icon is displayed in the middle of the display and the real-time range value is shown in the upper right corner.
- Press the Down button to exit the laser rangefinder function.

As shown above,the distance of the boar is about 50-100 yards.

13 PRODUCT CALIBRATION

When image degradation or non-uniformity occurs, it can be improved by calibration. Calibration allows the detector's background temperature to be balanced and thus eliminating defects in the image.
There are three calibration modes: Automatic (A), Manual (M) and Background (B). Select the desirable mode from the Calibration Mode option in the Main Menu.

- A mode (Automatic): The device calibrates the shutter automatically according to the software algorithm.
- M mode (Manual): On the Home screen, press and hold the Down button for manual shutter correction.
- B mode (Background): Close the lens cover, and press and hold the Down button to make the correction. After the correction is completed, open the lens cap.

14 PHOTOGRAPHING AND VIDEO RECORDING

The AURORA series has a built-in 32GB memory storage and supports photographing and video recording. The image and video files are named after time, so it is recommended to set the system date and time in the Main Menu before using the photographing and video recording functions, or to synchronize the system date and time in the settings of the RIX+ App. For details, refer to the Operating Instructions for the App in our official website (www.rix-nv.com).

Photographing

▸ On the Home screen, press the Photo button to take a photo. The image freezes for 0.5 sec with a camera icon flashing on the upper left corner. After the image is taken, the icon disappears.
▸ The images taken are saved in the built-in memory storage.

Video Recording

▸ On the Home screen, press and hold the Photo button to start the video recording.
▸ The recording icon and time prompt are displayed on the upper left corner of the display, and the time is in the format of HH:MM: SS (Hour: Minute: Second).
▸ Press and hold the Photo button again to stop recording and

Tips

▸ You can operate the menu while recording a video.
▸ Images and videos are saved in the formats of PIC_HHmmss.jpg and VID_HHmmss.mp4 respectively in the built-in memory card (HHmmss — hour, minute, and second);

Notes

▸ The maximum duration of a video file is 30 minutes. When the duration is more than 30 minutes, the video is automatically recorded onto a new file.

▸ Due to the limitation of the storage space, it is recommended that you clean the memory regularly or transfer the images and videos to another method of storage to free up the device memory.

Memory Access

▸ When the device is powered on and connected to a computer, it is recognized by the computer as a flash card. Then, you can access the memory of the device and copy images and videos.
▸ Connect the device to a computer through the data cable.
▸ Power on the device.
▸ Double-click My Computer on the desktop, double-click to open the device named "Aurora", then double-click to open the device named "Internal_Storage" to access its memory.
▸ Files named by time are displayed.

15 STATUS BAR

The status bar is in the lower part of the display to indicate the current operational status of the thermal imager. The display contents from the left to the right are as follows:

1. Time
2. Battery Pack status (the left side shows the built-in battery power, and the right side shows the external battery power. When the icon shows four cells inside, the device is at full power. When it shows one cell, the battery power is insufficient. Please charge it instantly.)
3. Current image mode (white hot mode; black hot mode; red hot mode; pseudo-color mode;)
4. Current magnification (e.g. 2×)
5. Shutter mode (manual; auto; background correction)

16 SHORTCUT MENU

In the shortcut menu, you can quickly adjust the basic configurations for commonly used functions. These include image mode, screen brightness, and image enhancement.

- On the Home screen, press the M button to enter the shortcut menu;
- Press the Up/Down button to switch to the following options.

Image mode: press the M button to change the image mode (white hot, black hot, red hot, color).

Screen brightness: press the M button to change the screen brightness from levels 1 to 5.

Screen contrast: press the M button to change the screen contrast from levels 1 to 5.

Image enhancement: press the M button to turn on/off image enhancement.

- Press and hold the M button to save the changes and return to the Home screen.

Notes

In the shortcut menu, if there is no operation within 5s, the device will automatically save the changes and return to the Home screen.

17 MAIN MENU

On the Home screen, press and hold the M button to enter the main menu. Press the Up/Down button to switch menu options.

Main Menu Options and Descriptions

Wi-Fi	**Turn Wi-Fi on/off** ▶ Press and hold the M button to enter the main menu. ▶ Press the Up/Down button to select the Wi-Fi option. ▶ Press the M button to turn the Wi-Fi on/off. ▶ When the function is turned on/off, the Wi-Fi icon in the status bar changes accordingly.
Calibration	**Choose shutter calibration mode** ▶ Press and hold the M button to enter the main menu. ▶ Press the Up/Down button to select the "Calibration" function option. ▶ Press the M button to switch between manual, automatic, and background calibration. ▶ The status bar displays the current shutter mode status.
Album	**Picture viewing and video playback** ▶ Press and hold the M button to enter the main menu. ▶ Press the Up/Down button to select the "Album" function option. ▶ Press the M button to access the Album screen. ▶ Within the Album screen, press the Up/Down button to select the file, then press the M button to view it full screen
Pixels Defect Correction	**During the use of the thermal imager, defective pixels may appear, such as bright or dark spots of constant brightness visible on the image, which need to be removed with the help of the Defect Pixels Calibration function.** ▶ Press and hold the M button to enter the main menu. ▶ Press the Up/Down button to select the Pixels Defect Correction option. ▶ Press the M button to enter the Defective Pixel Correction screen. ▶ The cursor moving direction (X-axis, Y-axis) and number of defective pixel corrections are displayed on the lower-left corner by default. ▶ Press the M button to change the moving direction, and press the Up/Down button to move the cursor. ▶ You can repeat the preceding steps to change the cursor location until it reaches the position of the defective pixel. ▶ Press the Photo button to add a defective pixel. The word "Add" is displayed, and the defective pixel is added. ▶ At the same position, you can revoke the defective pixel correction by pressing the Photo button again. The word "Del"is displayed.

Language	**Set the system language** ▶ Press and hold the M button to enter the main menu. ▶ Press the Up/Down button to select the"language"option. ▶ Press the M button to enter the Language submenu. ▶ Press the Up/Down button to select the desired language. ▶ Press the M button to confirm the selection. At the same time, the system saves your settings and exits to the gener- al settings submenu automatically
Calibration	**Select the measurement unit** ▶ Press and hold the M button to enter the main menu. ▶ Press the Up/Down button to select the "Unit Converter" function option. ▶ Press the M button to switch the unit between meters and yards.
Firmware Update	**SUpgrade firmware** ▶ Press and hold the M button to enter the main menu. ▶ Press the Up/Down button to select the "Upgrade" function option. ▶ Press the M button to automatically upgrade the firmware when the device has the upgrade package in its memory.

Reset Device	**Restoring factory default settings** ▶Press and hold the M button to enter the main menu. ▶Press the Up/down button to select the "Reset Device" function option. ▶Press the M button to enter the secondary menu for restoring the factory settings. ▶Press the Up/Down button to select Yes or No. Yes means to confirm the factory settings restoration, and No means to cancel the operation. ▶Press the M button to confirm the option. ▶When Yes is selected, the thermal imager automatically restarts. ▶When No is selected, the operation is canceled and returns to the previous menu level. After selecting Reset Device, the following functions are restored to their default state. Image mode: white hot. Image enhancement: off Electronic zoom: 1× magnification Wi-F i: Off
Info	**Show the system information** ▶Press and hold the M button to enter the main menu. ▶Press the Up/down button to select the "Info" function option. ▶The information about the current thermal imager is displayed: product model, software version number, hardware version number, PN code, SN code and other information.

18 PRODUCT WI-FI

The AURORA series has a built-in Wi-Fi module, which enables the wireless connection to external devices (computers and smartphones) via Wi-Fi.

▸ In the main menu, enable Wi-Fi on the device (for details of specific operations, refer to the operations of main menu functions).
▸ After the Wi-Fi is enabled, search for the Wi-Fi named AX_XXXXXX on the external device, among which XXXXXX is the serial number of the device.
▸ Select this Wi-Fi, enter the password, and connect it. The initial password is 12345678.
▸ After the Wi-Fi connection is established, you can control the device via the mobile app
Setting Wi-Fi Name and Password

The AURORA series supports users to change the name and password of the device Wi-Fi on the APP.

▸ On the app, find the "My Device" icon, and click it to enter the settings screen.
▸ n the text box, enter and submit the new Wi-Fi name (SSID) and password.
▸ After submitting the change, reset the device to activate the new settings.

Notice!
After the device is restored to the factory settings, the name and password of the Wi-Fi are also restored to the default factory settings.

19 PRODUCT UPDATES AND APP INSTRUCTIONS

The AURORA series supports APP technology, that is to say, the device can be connected to a smartphone or tablet via Wi-Fi for real-time image transmission, control operations, and program updates.
Instructions on how to use the APP are available on our official website (www.rix-nv.com).
You can update the firmware program through the APP, or go to the official website to download.
image mode, screen brightness, and image enhancement.

About APP

▸ You can go to the official website (www.rix-nv.com) or search for“RIX+”in the App Store and the Google Play to download and install the APP.

GET IT ON Google Play Download on the App Store

20 TECHNICAL CHECK

You are encouraged to perform a technical check over the device before each use to verify:

▸ The appearance of the device (no cracks in the casing).
▸ Conditions of lenses and eyepieces (no cracks, oil, dirt or other deposits)
▸ Conditions of the rechargeable battery (fully charged in advance) and the electrical contact (no salt or oxidation).

21 PRODUCT MAINTENANCE

Product maintenance should be performed at least twice a year and include the following:

- Wipe the outer surfaces of metal and plastic parts with a cotton cloth to remove dust and dirt. Silicone grease may be used, if possible.
- Use an organic solvent to clean the electrical contacts and battery slots.
- Inspect the glass surfaces of the eyepiece and lens. If necessary, remove dust and sand from the lenses (preferably using non-contact methods). Professional wiping tools and solvents should be used for cleaning of optical surfaces.

22 PRODUCT TROUBLESHOOTING

The following table lists all problems that are likely to occur during device operation. Check and address problems by referring to this table. If faults not included in this table occur or you cannot fix the fault, return the device to the vendor or supplier for troubleshooting.

Fault	Possible Causes	Solutions
The thermal imager cannot start.	The battery is out of charge.	Charge the battery
The device cannot be powered by an external power supply.	The USB cable is damaged.	Replace the USB cable.
	The external power supply is insufficient.	Replace the external battery or use USB power supply
Images are too dark.	The display is not bright enough.	Adjust the display brightness
The device cannot connect to a smartphone or computer.	The Wi-Fi password is incorrect.	Enter the correct password
	There are too many Wi-Fi networks in the detective range of the device, which may cause interference.	To enable stable network access, move the device to an area with a limited number of Wi-Fi networks, or an area without Wi-Fi coverage
Wi-Fi signals are lost or interrupted.	There are too many Wi-Fi networks in the range of the device, which may cause interference.	Move the device to a place where you can receive Wi-Fi signals

Wi-Fi signals are lost or interrupted.	The device is beyond Wi-Fi coverage. Something (such as a concrete wall) is blocking signals between the device and the receiver.	Move the device to a place where you can receive Wi-Fi signals
When the device is used at a low temperature, the imaging quality is poorer than at normal temperature.	At temperatures above 0°C, the temperature rise varies with the observed objects (environment and background) due to different heat conductivity coefficients. As a result, high-temperature contrast occurs and the image quality is better. At low temperatures, the observed targets (background) usually cool down to a similar temperature because of reduced temperature contrast. Therefore, the image quality (details in particular) is poor, which is a characteristic of thermal imaging devices.