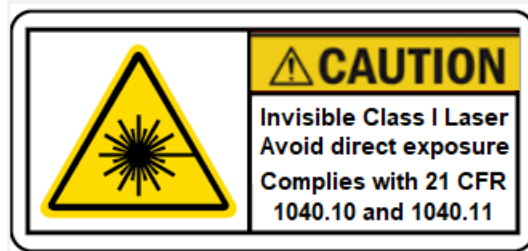




Aurora Series
Thermal Binoculars
User's Manual

Visir Inc.

WARNING:
AURORA A3R CONTAINS INVISIBLE CLASS I LASER.
PLEASE AVOID DIRECT EXPOSURE TO HUMAN EYE.



Technical Specifications

Model		A3	A3R
Detector parameters	Type	Uncooled Vanadium Oxide	
	Resolution	384x288	
	Pixel size	12µm	
	NETD	≤50mk	
	Frame rate	50Hz	
Optical parameters	Objective lens	35mm	
	F-number	1.0	
	Optical Magnification	4x~16x	
	Digital Zoom	1x/2x/3x/4x	
	Exit Pupil Distance	30mm	
	Exit Pupil Diameter	80mm	
Display	Type	OLED	
	Resolution	768X576	
	Dimension	2.69"	
Battery	Built-in Battery	Li-ion battery pack 3800mAh 3.7V	
	Extended Battery	AA battery X8	
	Working Voltage	3V ~ 4.2V	
	Input Voltage	5V (USB-C)	
Laser distance measurement	Safety requirements	/	Class 1(IEC:60825-1)
	Laser wavelength	/	900-908 nm safe to human eye
	Measurement Range	/	5 ~ 1300 yd
	Measurement accuracy	/	±1yd
Physical Specifications	Working hours*	24h	20h
	Internal memory	32GB	
	Operating temperature	-4 ⁰ F ~122 ⁰ F	
	Weight	2lbs 5oz	2lbs 6oz
	Size	8"x 6"x 2.4"	

- Actual operation time is dependent on the intensity of Wi-Fi usage, camera usage, and other activities
- Software and aspects of product design may be continuously updated to improve product performance. Technical parameters are subject to change without notice.

What’s Included

- AURORA Binoculars
- Portable Bag
- Power Adapter
- USB Cable
- Carrying Strap
- Lens-cleaning Cloth
- Quick Start Guide

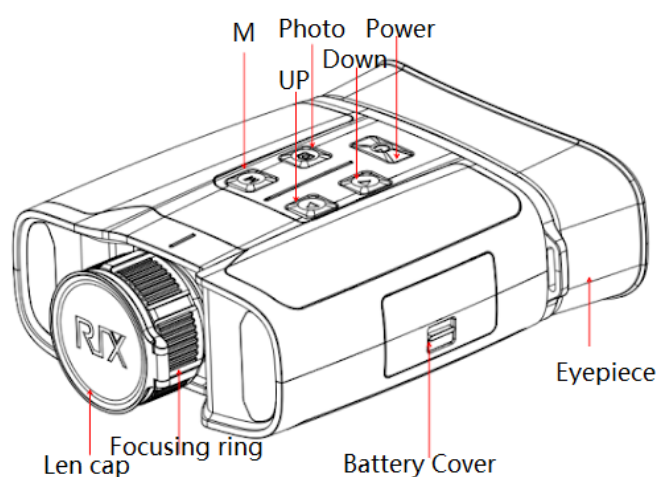
Product Overview

AURORA series binoculars is thermal imaging handheld product that integrates Wi-Fi connection with infrared observation, photography, video-recording capabilities. Its large 2.69-inch OLED displays and 2.5x eyepiece help avoid visual fatigue and offer added comfort. Using infrared thermal imaging technology, this device does not require any external light sources and can be used to clearly observe targets in day and night, in any weather conditions (e.g. rain, snow, fog, haze, etc.), and with any obstacles (tree branches, tall grass, shrubs, etc.). It can be widely used for night hunting, observation and terrain positioning, and search and rescue operations.

Product Features

Extra-large 2.69" display	Digital zoom: ×1/×2/×3/×4
Large eyepiece for comfortable observation	PIP function supported
High-quality imaging	Built-in Wi-Fi module iOS/Android compatible
Built-in batteries, extended ultra-long battery life	Image enhancement
Built-in 32G memory	

Components and Buttons



Button Operations

Buttons	Current Status	Press	Long press
Power button	Powered off	--	Power
	Home screen	Standby (on-screen standby icon)	Power off
	Standby mode	Cancel Standby	--
	Main menu interface	Return to upper menu without saving changes	--
Up button	Home screen	Digital zoom	Toggle PIP function
	Menu interface	Navigation upwards	--
M(Menu) button	Home screen	Open shortcut menu	Go to main menu
	Shortcut menu interface	Switch and confirm parameters	--
	Main menu interface	Enter submenu / Switch and confirm parameters	
	Defective pixel correction interface	Confirm selection / Save the position	--
Down button	Home screen	Enable/disable distance measurement	Calibration
	Menu interface	Navigation downwards	--
Photo button	Home screen	Take a photo	Toggle video recording function
	Defective pixel correction interface	Add/delete defective pixels	--

1. Power Supply

The AURORA series uses rechargeable lithium-ion batteries with a battery life of 10 hours. 8 AA batteries can also be added to extend battery life to up to 24 hours. Please charge device before the first use (only built-in battery can be charged).

Battery Charging

- ❑ Open the Type-C cover on the device and connect the USB-C power adapter
- ❑ Plug the power adapter into a 100-240V outlet
- ❑ LED on the device will glow or blink
 - If the indicator is steady red, the battery is being charged
 - If the indicator turns green, the battery is fully charged
- ❑ When charging is complete, unplug the cable and close the cover

Extended Battery Installation

- ❑ Push the switch to open the battery compartment cover
- ❑ Install 4 AA batteries in order, paying attention to the positive and negative directions
- ❑ Press the switch while closing the battery compartment cover
- ❑ Battery can be removed by pulling the cord
- ❑ Repeat the operation to install 4 AA batteries on the other side

Safety Precautions

- ❑ When the binoculars are unused for a long time, the battery needs to be partially charged
- ❑ When relocating from a cold to warm environment, Wait 30-40 minutes before charging. Do not charge the device immediately
- ❑ Do not charge equipment without monitoring
- ❑ Use of damaged or modified chargers is prohibited
- ❑ Battery should be charged within a temperature range of 32°F ~ 113°F, charging outside this range may reduce the life of the battery.
- ❑ Do not charge for more than 24 hours.
- ❑ Do not expose the equipment to high temperatures or flames.
- ❑ Do not connect with third-party equipment that exceeds the rated current
- ❑ Do not disassemble or alter the battery pack
- ❑ Decreases in battery life when working at low temperature is normal
- ❑ Do not use above 122°F - this may reduce battery life

2. External Power Supply

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

- ❑ Connect the external power supply to the Type C port
- ❑ The device will switch to an external power supply and charge built-in battery at the same time
- ❑ A charging icon will appear on the display
- ❑ When the external power supply is disconnected, the AURORA series will automatically switch to the built-in battery without powering off.

3. Power On

- ❑ Remove the lens cap and hold the **POWER button**, the home screen will display after several seconds.
- ❑ Rotate the focusing ring of the objective lens to focus on the object
- ❑ To set the scene mode, image mode, display brightness, image contrast, and other functions, refer to the shortcut menu
- ❑ To power off, press and hold the **POWER button** and a shutdown countdown will be displayed, release the button after the countdown

4. Digital Zoom

The AURORA series supports digital zoom for rapidly zooming in on target images to increase magnification

- ❑ On the home screen, briefly press the **UP button** to zoom image
- ❑ The corresponding magnification is displayed in real time on the left side of the display
- ❑ 4×, 8×, 12×, and 16× magnification correspond to 1×, 2×, 3× and 4× digital zoom respectively

5. PIP function

Picture-in-Picture (PIP) provides a floating window on the screen that indicates the part of the image which is zoomed in to 2×.

- ❑ On the home screen, press and hold the **UP button** to turn the PIP function on/off
- ❑ When pressing the **UP button** to adjust digital zoom, the image in the PIP window will also be enlarged by 2× accordingly

6. Stadiametric Rangefinder

The AURORA A3 model integrates a Stadiametric Rangefinder Function, which can estimate the approximate distance to an object by using its size.

- ❑ In the home screen, press the **Down button** to turn the Stadiametric Rangefinder Function on/off
- ❑ After this function is enabled, two horizontal lines used for measuring will appear on the screen, and icons of three pre-configured objects and measured values will be displayed on the left side.
- ❑ Dimensions of three predefined objects are:
 - Deer: 1.7 m
 - Wild boar: 0.9 m
 - Hare: 0.2 m
- ❑ Place the target at the center of the screen and align the horizontal lines with the target by pressing the **UP/DOWN buttons**; the approximate distance to the corresponding target will be shown
- ❑ Press the **POWER button** again to exit to the Stadiametric Rangefinder Function

The AURORA A3R model is equipped with a Laser Rangefinder, with the detection range of 1300 yards.

- ❑ On the home screen, press the **DOWN button** to turn the Laser Rangefinder Function on/off
- ❑ A range indicator icon will be displayed in the middle of the screen and the real-time range value will be shown in the upper right corner.
- ❑ Press the **DOWN button** again to exit the Laser Rangefinder Function

7. Calibration

Calibration can be used to improve any image quality degradants or non-uniformity. Calibration allows the detector background temperature to be balanced and can eliminate image defects.

Select “Calibration Mode” from the main menu. There are three calibration modes: Automatic (A), Manual (M) and Background (B).

- ❑ A mode (Automatic): The device will calibrate 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, press and hold the **DOWN button** to make the correction, after the correction is completed, remove the lens cap

8. Photography and Video Recording

AURORA series binoculars are equipped with 32GB built-in memory storage and support photography and video recording. Image and video files will be named according to the time they are taken. So, it is recommended to set the system date and time in advance. Or synchronize the system date and time in APP. For details, refer to the Operating Instructions for the APP on our official website (www.rix-nv.com).

Photography

- ❑ On the home screen, press the **PHOTO button** to take a photo
- ❑ The image freezes for 0.5 seconds while a camera icon flashes on the upper left corner. After the image is taken, the icon disappears
- ❑ The images are saved in the built-in memory

Video Recording

- ❑ On the home screen, press and hold the **PHOTO button** to start the video recording
- ❑ The recording icon and recording time prompt are displayed at the upper left corner of the screen in the format *HH:MM:SS*
- ❑ Press and hold the **PHOTO button** again to stop and save the video recording.
- ❑ Videos are saved in the built-in memory.

Tips

- ❑ The menu can be operated simultaneously while recording a video.
- ❑ The images and the videos are saved in formats of *IMG_YYYYMMDDHHMMSS.jpg* and *VID_YYYYMMDDHHMMSS.mp4*

Note

- ❑ The maximum duration of a video recording is 30 minutes. When the duration is more than 30 minutes, the video will be automatically recorded onto a new file
- ❑ Due to limited storage, memory should be cleaned regularly, or images and videos should be moved to another storage medium to release local memory storage

Memory Access

- ❑ When the device is powered on and connected to a computer, it will be recognized by the computer as a flash drive. Image and video files can be copied
- ❑ Connect the device to a computer through the USB cable.
- ❑ Power on the device.
- ❑ Open the device named "RIX" > "AURORA Storage" to access the memory.

9. Status Bar

The status bar located at the bottom of the screen indicates the current operation status. The status from the left to the right are as follows:

1. Time
2. Battery indicator (left: built-in battery, right: extended battery. Four-cell is full power,

flashing means charging)

3. Image mode (white hot/black hot/red hot/pseudo-color)
4. Scene mode (jungle/city/bird watching)
5. Magnification (e.g., 2x)
6. Shutter modes (manual/auto/background correction)

10. Shortcut Menu

Frequently used functions can be called from the shortcut menu, including image mode, scene mode, screen brightness and image enhancement.

- ☐ On the home screen, press the **M button** to enter the shortcut menu
- ☐ Press **UP/DOWN buttons** to switch the following options.
- ☐ Image mode: press **M button** to change the image mode (white hot - black hot - red hot - pseudo color).
- ☐ Scene mode: press **M button** to change the scene mode (jungle - city - bird watching).
- ☐ Screen brightness: press **M button** to change the screen brightness from 1 to 5 levels.
- ☐ Image enhancement: press **M Button** to turn on/off image enhancement.
- ☐ Press and hold the **M button** to save the changes and return to the home screen.

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

11. Main Menu

- ☐ On the home screen, press and hold the **M button** to enter the main menu.
- ☐ Press **UP/DOWN buttons** 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 ● Short press the M button to turn Wi-Fi on/off The status bar displays the current Wi-Fi status
Calibration	Choose shutter calibration mode ● Press and hold the M button to enter the main menu ● Press the UP/DOWN button to select "Calibration" ● Press M button to switch between manual, automatic and background calibration The status bar displays the current shutter mode status

Playback function	Picture viewing and video playback ● Press and hold the M button to enter the main menu ● Press the UP/DOWN button to select the "Playback" function option. ● Press the M button to access the playback screen ● Press the UP/DOWN button to select the file, then press the M button for full screen view
Defect-pixel Correction	During camera use, defect pixels (such as bright or dark spots) may appear, which need to be removed using the <i>Defect-pixels Calibration</i> function ● Press and hold the M button to enter the main menu ● Press the UP/DOWN button to select the <i>Defect-pixel Correction</i> option ● Press the M button to enter the defect-pixel correction interface ● Cursor movement 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 movement direction, and press the UP/DOWN button to move the cursor ● Press the PHOTO button to add a defective pixel, "Add" is displayed ● Undo defective pixel correction by pressing the PHOTO button again, "Del" is displayed ● The number of defect pixels is displayed accordingly ● After the correction, press and hold the POWER button until a prompt is displayed to confirm whether to save the correction or not. Select "Yes" to save or "No" to cancel
Language	Setting the system language ● Press and hold the M button to enter the main menu ● Press the UP/DOWN button to select language ● Press the M button to enter sub-menu ● Press the UP/DOWN button to select the desired language ● Press the M button to confirm selection
Measurement Units	Measurement units ● Press and hold the M button to enter the main menu ● Press the UP/DOWN button to select units ● Press the M button to switch units
Firmware Update	Upgrade Firmware ● Press and hold M button to enter the main menu ● Press the UP/DOWN button to select the "Upgrade" function ● Press the M Button to automatically upgrade when new firmware is available
Factory Reset	Restore factory default settings ● Press and hold the M button to enter the main menu ● Press the UP/DOWN button to select "<i>Factory Reset</i>" ● Press the M button to enter the secondary menu for restoring the factory settings ● Press the UP/DOWN button to select Yes/No ● Press the M button to confirm. When "Yes" is selected, the thermal

	imaging camera will automatically restart After selecting <i>Restore Factory Settings</i>, the following functions will be restored to their default status. ☐ Image mode: white heat ☐ Scene mode: city ☐ Image enhancement: off ☐ Digital zoom: 1x magnification ☐ Wi-Fi: Off
Info	Display system information • Press and hold the M button to enter the main menu • Press the UP/DOWN button to select "<i>Info</i>" System information is displayed: product model, software version, hardware version, PN code, SN code, FCC ID etc.

12. Wi-Fi function

The AURORA series has a built-in Wi-Fi module, which allows the device to connect to external devices (computers, smartphones).

- ☐ In the main menu, enable Wi-Fi on the device
- ☐ Search for the Wi-Fi named A3_XXXXXX on the external devices, where XXXXXX is the serial number
- ☐ Select this Wi-Fi, enter the password and connect. The default password is 12345678
- ☐ After Wi-Fi connection is established, the device can be controlled via the mobile application

Set Wi-Fi Name and Password

The AURORA series supports modifying the name and password of the device Wi-Fi through the application.

- ☐ Click the "My Device" icon to enter settings page
- ☐ Enter new Wi-Fi name (SSID) and password in the text box
- ☐ Restart device

13. Product Updates and App Instructions

Image transfer, device control, and firmware update can be performed through the APP. Instructions for using APP can also be downloaded from the official website (www.rix-nv.com).

About the App

- ☐ RIX NP can be downloaded from the official website (www.rix-nv.com), on the Android or Apple store, or through scanning the **QR code below**.



14. Inspection Before Use

It is recommended to perform the following inspection before each use

- ☐ No cracks should appear on product surface
- ☐ Lens and eyepieces should be free of oil or dirt
- ☐ Ensure no oxidation on battery electrodes

15. Product Maintenance

Product maintenance should be performed at least twice a year as follows:

- ☐ Wipe external surfaces with a soft cloth to remove dust and dirt, silicone grease may be used
- ☐ Use an organic solvent to clean electrical contacts and battery chamber
- ☐ Clean lenses or eyepieces if needed with lens-cleaning cloth and solvent (non-contact methods preferred)

16. Troubleshooting

The following table lists all problems that are likely to occur during operation. Check and address problems by referring to this table. If the problem cannot be solved, please contact product support.

Faults	Possible Causes	Solutions
Binoculars cannot start	Battery is out of charge	Charge the battery
The device cannot be powered from external power supply	USB cable is damaged	Replace the USB cable
Images are too dark	Brightness setting is not correct	Adjust the display brightness
The image quality is poor or the detection range is wrong	Likely to occur when the device is used in harsh weather such as snow, rain, and fog	

The device cannot connect to a smartphone or computer	Wi-Fi password is incorrect	Enter the correct password
Wi-Fi signals are lost or interrupted	Device is beyond Wi-Fi coverage	Move binoculars and connect device closer
Imaging quality is poorer at low temperature	At temperatures above 32°F, larger differences in temperature are recorded between the object and background due to different heat conductivity coefficients, resulting in better image contrast than at lower temperatures.	

17. Warning

§ 15.19 Labelling requirements.

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.

§ 15.21 Information to user.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

§ 15.105 Information to the user.

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.

Body Operation

This device was tested for typical body-operations. To comply with RF exposure requirements, a minimum separation distance of 0 mm must be maintained between the user's body and the device, 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.