

# Surtur Series

# USER MANUAL

Hand-Held Thermal Imaging Monocular



S2-625/635

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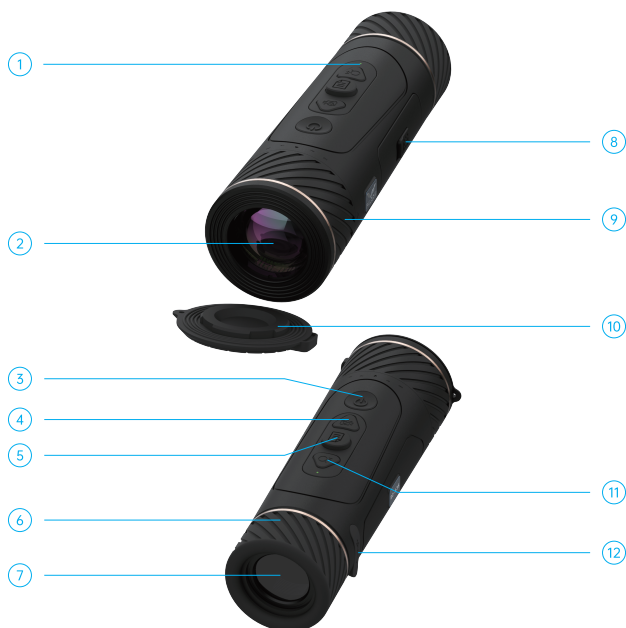




## 1. Product Overview

1. The S2-625/635 is a monocular handheld infrared thermal imaging monocular used for observation during nighttime and under adverse weather conditions.
2. The infrared optical system receives the infrared radiation from the target object. After spectral filtering, the distribution of the target's infrared radiation energy is reflected onto each photosensitive element of the infrared detector array on the focal plane. The detector converts the infrared radiation energy into electrical signals. The input circuit of the detector bias and pre-amplifier outputs the required amplified signal and injects it into the readout circuit.
3. The movement assembly digitizes the detector's output signal and processes the initial infrared image, including correction, dead pixel elimination, brightness and contrast control, pseudo-color mapping, interface overlay, and reticle display. The processed signal is sent to the OLED display. The operator observes the infrared thermal image of the target object through the 14X eyepiece.

## 2. Product Components



|                          |                             |                                |
|--------------------------|-----------------------------|--------------------------------|
| 1.Device Indicator Light | 2.Objective Lens            | 3.Power Button                 |
| 4.Navigation Button(up)  | 5.Menu Button               | 6.Eyepiece Focusing Eyecup     |
| 7.Eyepiece               | 8.Battery Compartment Cover | 9.Objective Lens Focusing Ring |
| 10.Lens Cap              | 11.Navigation Button (down) | 12.Data Port Cover             |

## 3. Package Contents

- ▶ S2-625/635 Hand-Held Thermal Imaging Monocular
- ▶ 18500 Battery
- ▶ Anti-Slip Hand Strap
- ▶ Type-C Data Cable
- ▶ 5V2A Adapter
- ▶ User Manual

## 4. Operation Instructions

### 4.1. Warnings

- (1) Do not point the device at intense radiation sources(e.g. sun, CO<sub>2</sub> lasers, welding equipment).
- (2) The interval between powering OFF and ON again should be greater than 20 seconds.
- (3) The hand-held thermal imaging monocular combines precision optical instruments and electronic components sensitive to static electricity. Do not throw, strike, or vibrate the hand-held thermal imaging monocular or its accessories, to avoid deformation of structural parts or mounting dimensions.
- (4) Do not disassemble the hand-held thermal imaging monocular yourself. If a malfunction occurs, contact the manufacturer promptly; otherwise, the warranty will be void.
- (5) When the hand-held thermal imaging monocular is not in use and during transportation, remove the battery and place the monocular in its protective case.
- (6) Replace the battery promptly when it is low during use to avoid damage caused by over-discharge.
- (7) Using the hand-held thermal imaging monocular outside the environmental conditions specified in this manual may cause damage.

## 4.2. Notes

- (1) When cleaning non-optical surfaces of the hand-held thermal imaging monocular, do not use chemical solvents or thinners. Use a clean, soft, dry cloth to wipe the housing.
- (2) The infrared lens of the hand-held thermal imaging monocular is coated with an anti-reflective coating. Clean it only when noticeably dirty, as frequent wiping may wear the lens coating. Avoid touching the lens surface, as acidic substances left by fingerprints will damage the coating and lens surface. Clean the lens ONLY with a dedicated lens cloth.
- (3) After observation or if no target is observed for an extended period after powering ON, power OFF promptly to extend the effective usage time of the hand-held thermal imaging monocular.

## 5. Button Functions



### Power Button

- (1) Press and hold the power button for 3 seconds to turn the device on or off
- (2) While powered ON, press and hold for 1-3 seconds: the screen displays a sleep icon indicating Sleep Mode. Short-press to wake up from Sleep Mode.
- (3) Short-press on the observation interface to switch the shutter (calibration plate).

### Navigation Button(UP)

- (1) Short-press: Move selection Up; When no menu is active, switch display modes.
- (2) Press and hold to take a photo.

### Menu Button

- (1) Short press: Open/Close menu. Use UP/DOWN buttons to navigate menu options. Short-press Menu button to enter a submenu. While in a menu, press and hold to return to the previous menu level.
- (2) While in a menu, press and hold to return to the previous menu level.

### Navigation Button(Down)

- (1) Short-press: Move selection Down; When no menu is active, switch magnification (1x,2x,4x,8x).
- (2) Press and hold to start recording.

## 6. Menu Functions

| Icon                                                                                | Main Menu         | Function Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | Mode Selection    | <p>Mode options (5 total): "White Hot, Black Hot, High Light, Low Light, Fusion". Default mode is White Hot.</p> <div>      </div> <p>White Hot      Black Hot      High light      Low Light      Fusion</p> |
|    | WIFI              | <p>1. Turn on the WIFI in the device menu, then open the mobile phone's WIFI and the testing software APP. Find the MAC address name "APPshow-xx-xxx" in the phone's WIFI, enter the password "12345678" to connect to the device.</p> <p>2. After connecting the device to the mobile phone via WIFI, the real-time captured image can be observed.</p>                                                                                                                                                                                                                                                                           |
|    | Screen Brightness | Press the menu button to enter the brightness menu; there are 10 options. Selecting any option will cause corresponding changes in the screen display. Choose an appropriate level according to usage preferences.                                                                                                                                                                                                                                                                                                                                                                                                                 |
|    | Contrast          | Press Menu button to enter. 10 contrast levels available. Selecting any option changes the image contrast accordingly. Higher values result in stronger image contrast.                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|    | Image Detail Enh  | Press the menu button to enter the Image Detail Enhancement option. A higher value results in more details.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|  | Advanced Settings | <p>► Date/Time<br/>Select the "Date/Time" menu, short-press the power button to enter sub-options. Short-press the menu button to move between options, short-press the Up/Down buttons to adjust values. After adjustment, long-press the menu button to save and exit.</p> <p>► Multi-language<br/>Press the menu button to enter the language settings. Use the Up/Down keys to select the desired language, then short-press the menu button to confirm.</p>                                                                                                                                                                   |

|                                                                                   |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>Advanced Settings</p> | <ul style="list-style-type: none"> <li>▶ <b>Recording Audio</b><br/>When the cursor selects "Recording Audio", press the menu button to open the sub-menu. Choose "On" or "Off" in the sub-menu to enable/disable audio recording with video.</li> <li>▶ <b>Format</b><br/>When the cursor selects the "Format Memory Card" menu, short-press the menu button to enter the sub-menu. Toggle selections with the Up/Down navigation keys, then short-press the menu button again to confirm the option. Exercise caution when confirming, as data cannot be recovered after deletion.</li> <li>▶ <b>Auto Power Off</b><br/>When the cursor selects "Auto Power Off Setting", short-press the menu button to open the sub-menu. Choose "3 minutes", "5 minutes", or "Off" in the sub-menu (default is Off). After powering on, select 3 minutes, 5 minutes, or disable auto power-off.</li> <li>▶ <b>Default Values</b><br/>When the cursor selects "Restore Factory Settings", press the menu button to open the sub-menu. Toggle between "Confirm" or "Cancel" using the Up/Down navigation keys, then short-press the menu button again to confirm the selection. After confirmation, the device will restore to factory default settings. Proceed with caution.</li> <li>▶ <b>Bad Pixel Repair</b><br/>When the cursor selects the "Bad Pixel Repair" menu, short-press the menu button to enter the sub-menu. Toggle between "Auto Repair" and "Manual Repair" modes using the Up/Down navigation keys. To perform repair, cover the lens cap and follow the prompts for bad pixel repair.<br/>(1) Select "Auto Repair" and short-press the menu button to complete repair.<br/>(2) Select "Manual Repair": Move the cursor with Up/Down navigation keys, toggle options with the power button, then short-press the menu button to save.</li> <li>▶ <b>Image Calibration</b><br/>Enter the Image Calibration menu. To calibrate, select "Confirm", cover the lens cap, then short-press the menu button to calibrate background image uniformity. Calibration automatically saves and exits upon completion.</li> <li>▶ <b>Version Information</b><br/>When the cursor selects "Version", press the menu button to view the device's software version information.</li> </ul> |
|-----------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 7. Device Connection

Download the dedicated app to connect the device to your mobile device via WiFi.

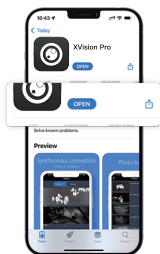


Android/iOS: Scan to download



XVision

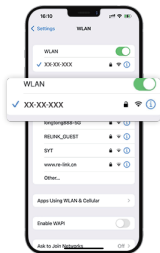
Search "XVision" on Google Play to Download.



Download and install the app



Turn on the device and enable WiFi.



Select WiFi "xx." and connect  
(Default WiFi password: **12345678**)



Open the App



## 8. Specifications



### S2-625/635

| Sensor                                           |                         |
|--------------------------------------------------|-------------------------|
| Type                                             | Uncooled Vanadium Oxide |
| Pixel Resolution                                 | 640x512                 |
| Frame Rate                                       | 50 Hz                   |
| Pixel Size                                       | 12μm                    |
| Thermal Sensitivity                              | ≤18mk                   |
| Optical Characteristics                          |                         |
| Objective Lens                                   | 25mm/35mm/F1.0          |
| Base Magnification                               | 1.4X/2X                 |
| Digital Zoom                                     | 1x / 2 x/ 4 x/ 8x       |
| Eye Relief                                       | 30mm                    |
| Diopter Adjustment                               | +5/-5 D                 |
| Focus Distance                                   | 5m - ∞                  |
| Field of View                                    | 17.5°X14.0°/12.5°X9.4°  |
| Detection Distance<br>(Target Size: 1.7m X 0.5m) | 1250m/1750m             |

| Display                |                                                     |
|------------------------|-----------------------------------------------------|
| Color Modes            | White Hot, Black Hot, High Light, Low Light, Fusion |
| Type/Resolution        | 0.39 inch / OLED / 1024X768                         |
| Product Features       |                                                     |
| Power Supply           | 3-4.2 V                                             |
| Battery                | Two 18500/4000mAh Batteries                         |
| External Power         | 5V (USB)                                            |
| Operating Time         | 5 hours                                             |
| Waterproof Rating      | IP67                                                |
| Operating Temperature  | -20°C~+50°C                                         |
| Dimensions             | 184.7x66x59.84mm/188.2x66x59.84mm                   |
| Weight                 | 480g ±5g                                            |
| Video Recorder         |                                                     |
| Video/Photo Resolution | 1024x768                                            |
| Video/Photo Format     | .mp4 / .jpg                                         |
| Storage Card           | Built-in 32G Memory Card                            |
| Wireless Channel       |                                                     |
| Frequency              | 2.4GHz                                              |
| Standard               | 802.11 b/g                                          |
| WiFi Reception Range   | 15m                                                 |

## 9. Maintenance

- (1) Upon completion of observation or when the device has been powered on for an extended period without observing targets, it should be turned off promptly to extend the effective service life of the hand-held thermal imaging monocular.
- (2) The lens of the hand-held thermal imaging monocular is a critical optical component. During installation and use, avoid contamination and damage to the lens surface by oil stains or various chemicals. After use, please cover the lens with the lens cap.
- (3) When the hand-held thermal imaging monocular is not in use, and during transportation, please remove the battery and store the hand-held thermal imaging monocular in its packaging case.
- (4) When the hand-held thermal imaging monocular is stored for long periods or not in operation, it should be stored in a cool and dry environment whenever possible.
- (5) Do not scrub the housing of the hand-held thermal imaging monocular with chemical solvents, thinners, etc. It can be wiped clean using a clean, soft, and dry flannel cloth.
- (6) The lens of the hand-held thermal imaging monocular only needs cleaning when visibly soiled. Avoid touching the lens surface, as acidic substances from skin left by fingerprints can damage the coating and lens surface. Clean the lens only with a dedicated lens cloth.
- (7) When not used for extended periods, the device should be powered on for inspection and calibration once every six months.

## FCC Caution:

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.
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance 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.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.





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