

Surtur Series

USER MANUAL

Hand-Held Thermal Imaging Monocular



S1-625/635L

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1. Product Overview

1. S1-625/635L is an infrared thermal imaging monocular designed for observation and ranging under low-light or adverse weather conditions.
2. The device detects thermal radiation from target objects. The thermal imaging module captures the image signal, processes it, and transmits it to an OLED display. Users can then view a magnified, clear image through the eyepiece. Additionally, real-time image observation, monitoring, and system adjustments can be performed via a smartphone app.
3. High-resolution thermal imaging module paired with a large-aperture infrared lens, delivering high-quality thermal images. Adjustable eyepiece focus, allowing clarity optimization for targets ranging from 5 meters to infinity.

2. Product Components



1. Device indicator light	2. Objective lens focus ring	3. Objective lens
4. Rangefinder module	5. Power switch	6. Menu button
7. Eyepiece focus ring	8. Eyepiece	9. Data Storage Compartment Cover
10. Lens Cap	11. Navigation Button Up	12. Navigation Button Down
13. Eyepiece Eyecup	14. Battery Compartment Cover	

3. Package Contents

- ▶ S1-625/635L Hand-Held Thermal Imaging Monocular
- ▶ 18650 Battery
- ▶ Anti-Slip Wrist Strap
- ▶ Type-C Data Cable
- ▶ 5V/2A Adapter
- ▶ User Manual

4. Operation Instructions

4.1. Warnings

- (1) Do not point the Hand-Held Thermal Imaging Monocular at the sun, CO₂ lasers, welding machines, or other high-intensity radiation sources.
- (2) The interval between two power cycles should be at least 20 seconds.
- (3) Handle with care during operation. Avoid dropping, striking, or subjecting the device to vibrations, as this may damage optical/electronic components or cause structural deformation.
- (4) Do not disassemble the Hand-Held Thermal Imaging Monocular. In case of malfunction, contact the manufacturer immediately. Unauthorized disassembly will void the warranty.
- (5) When not in use or during transportation, remove the battery and store the Hand-Held Thermal Imaging Monocular in a protective carrying case.
- (6) Replace the battery promptly when the battery level is low to prevent deep discharge, which may damage the battery.
- (7) Using the device outside the specified operating conditions may cause damage to the Hand-Held Thermal Imaging Monocular.

Note: Only charge with a 5V 2A charger

4.2. Usage Method

- (1) Unpack the Hand-Held Thermal Imaging Monocular, install the battery, then press and hold the power button for 3 seconds to turn it on.
- (2) Look through the eyepiece at the internal display, and manually adjust the diopter ring until the symbols and numbers on the screen appear sharp and clear.
- (3) Aim the thermal imaging lens at the target object, then fine-tune the diopter ring of the imaging module until the observed object is in clear focus.

4.3. Precautions

- (1) Clean the product's optical components (thermal imaging objective lens, eyepiece, and laser rangefinder lens) only when dirt affects image quality.
Method: Gently wipe the soiled area of the lens surface with a lens cloth lightly moistened with alcohol. Avoid excessive rubbing to prevent damage to the anti-reflective coating.
- (2) Turn off the device immediately after use or if no observation is performed for an extended period after startup. This helps prolong the effective service life of the Hand-Held Thermal Imaging Monocular.

5. Button Functions



Power Button

- (1) Press and hold for 3 seconds to power on/off.
- (2) Main Screen: Tap once to turn the screen on or off; double-tap to take a photo manually.
- (3) Menu Mode: Press briefly to exit Menu Mode.



Up Navigation Button

- (1) Menu Mode: Press briefly to move up.
- (2) Main Screen: Tap briefly to take a photo; press and hold to record a video.



Menu Button

- (1) Main Screen: Tap briefly to switch modes; press and hold to open the menu.
- (2) Menu Mode: Press and hold to return to the previous menu or exit the menu.



Down Navigation Button

- (1) Menu Mode: Press briefly to move down.
- (2) Main Screen: Tap briefly to change the magnification;
Press and hold to turn the rangefinder on or off.

6. Menu Functions

Icon	Main Menu	Function Description
	Mode Selection	Mode options include 5 items: "White Hot, High Light, Black Hot, Low Light, Pseudo-color, Red Hot". Default mode is White Hot.
	Auto NUC	When enabled, the shutter speed will automatically adjust based on time and temperature to optimize image quality; when disabled, the shutter speed will not adjust based on time and temperature, and you will need to manually adjust the shutter speed to correct image quality. Please use this feature with caution;
	Screen Brightness	Press the menu button to enter brightness settings with 10 options. Selecting any option causes corresponding changes in the screen display. Choose the appropriate level based on usage preference.
	Contrast	Press the menu button to enter contrast settings with 10 options. Selecting any option causes corresponding changes in the imaging display. Higher values result in stronger image contrast.
	Image Detail Boost	Press the menu button to enter image detail enhancement options. Higher values reveal more details.
	Advanced Settings	▶ Zoom Select Move the cursor to the zoom option and press the Menu button to open the submenu. Use the Up/Down keys to select from the available zoom levels, then press the Menu button to enable or disable that level. ▶ WIFI 1. Turn on Wi-Fi in the device menu, then enable Wi-Fi on your phone and open the testing software APP. Locate the MAC address named "APPshow-XX-XXXX" in your phone's Wi-Fi list, enter password "12345678" to connect the device. 2. After connecting the device to the phone via Wi-Fi, real-time captured images can be viewed. ▶ LRF Unit of Measure Two options available: Meters / Yards

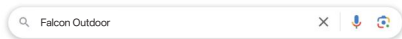
	Advanced Settings	▶ Date/Time Select "Date/Time" menu, short-press menu button to enter sub-options. Short-press menu button to move between options, short-press Up/Down keys to adjust values. Long-press menu button to save and exit after adjustment. ▶ Multi-language Press the menu button to enter the language settings. Use the Up/Down keys to select the desired language, then short-press the menu button to confirm. ▶ Recording Audio Move cursor to "Recording Audio" and press menu button to open sub-menu. Select "On" or "Off" to enable/disable audio recording during video capture. ▶ Format Enter format sub-menu, short-press menu button to select "Confirm" or "Cancel". Operate with caution! Data cannot be recovered after deletion! ▶ Auto Shutdown Options: 3 minutes, 5 minutes, Off (Default). After powering on, users can select either 3 or 5 minutes for automatic shutdown. ▶ Default Settings Move cursor to "Default Settings" and press menu button to open sub-menu. Select "Confirm" or "Cancel" to restore factory default settings. Operation will reset device to factory default state. Proceed with caution. ▶ Dead Pixel Repair Move cursor to "Dead Pixel Repair" menu, short-press menu button to enter sub-menu. Toggle between "Auto Repair" and "Manual Repair" modes using Up/Down keys. Cover the lens cap before repair and follow prompts. (1) Select "Auto Repair", short-press menu button to complete repair. (2) Select "Manual Repair", move cursor with Up/Down keys, toggle options with Power button, short-press menu button to save. ▶ Image Calibration Enter Image Calibration menu. To calibrate, select "Confirm", cover the lens cap, then short-press menu button to calibrate background image uniformity. Calibration results save automatically upon completion. ▶ Version Information Move cursor to "Version" and press menu button to view device software version information.
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7. Device Connection

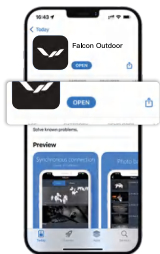
Download the dedicated app to connect to mobile devices via Wi-Fi.



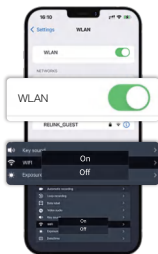
Scan for Android/iOS download



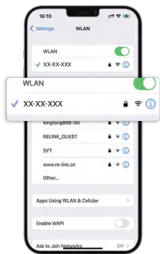
Google Play Store search "Falcon Outdoor" to download



Download and install the APP



Turn on WIFI on both the phone and the device



Select wifi "XX..." and connect
(WIFI default password: **12345678**)



Open the APP

8. Specifications



51.55mm



82.85mm

177.45mm/185.85mm

S1-625/635L

Sensor	
Type	Uncooled Vanadium Oxide (VOx)
Resolution	640x512
Frame Rate	50 Hz
Pixel Size	12μm
NETD	≤18mk
Optics	
Objective Lens	25/35mm/F1.0
Base Magnification	1.4X/2X
Digital Zoom	1x / 1.5x / 2 x / 2.5x / 3 x / 4 x / 6x / 8x
Eye Relief	30mm
Diopter Adjustment	+5/-5 D
Focus Distance	5m - ∞
Field of View	17.5°X13.1°/12.5°X9.4°
Detection Range (Target Size: 1.7m x 0.5m)	1250m/1750m

Display	
Operating Modes	White Hot, Black Hot, High Light, Low Light, Fusion, Red Hot
Type/Resolution	0.39 inch / OLED / 1024X768
Power	
Voltage	3-4.2 V
Battery	18650 Li-ion, 3500mAh
External Power	5V (USB)
Runtime	5 hours
Waterproof Rating	IP67
Operating Temperature	-20°C~+50°C
Dimensions	177.45×51.55×82.85mm/185.85×51.55×82.85mm
Weight	394g/402g ±5g
Recording	
Video/Photo Resolution	1024x768
Video/Photo Format	.mp4 / .jpg
Storage	Built-in 32GB memory card
Wireless	
Frequency	2.4GHz
Standard	802.11 b/g/n
WiFi Range	15m
Rangefinder	
Wavelength	905nm
Maximum Range	1000m
Accuracy	+ /-1m

9. Maintenance and Care

- (1) The lens of Hand-Held Thermal Imaging Monocular is a critical optical component. During installation and use, avoid contact with oil, chemicals, or other contaminants that may damage the lens surface. Always cover the lens with the lens cap after use.
- (2) When not in use or during transportation, remove the battery and store the Hand-Held Thermal Imaging Monocular in its protective case.
- (3) For long-term storage or periods of inactivity, keep the Hand-Held Thermal Imaging Monocular in a cool, dry environment.
- (4) Do not clean the housing of the Hand-Held Thermal Imaging Monocular with chemical solvents or thinners. Instead, use a clean, soft, and dry lint-free cloth.
- (5) If the device is not used for an extended period, power it on and perform a calibration check at least 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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