FALCON

Medusa Series

Product User Manual

Thermal Imaging Camera

ME6-50L

CONTENTS

1. Product Overview 01

2. Product Components 02

3. Package Contents 03

4. Operation Instructions 03

5. Button Functions 04

6. Menu Functions 05

7. APP Connection 07

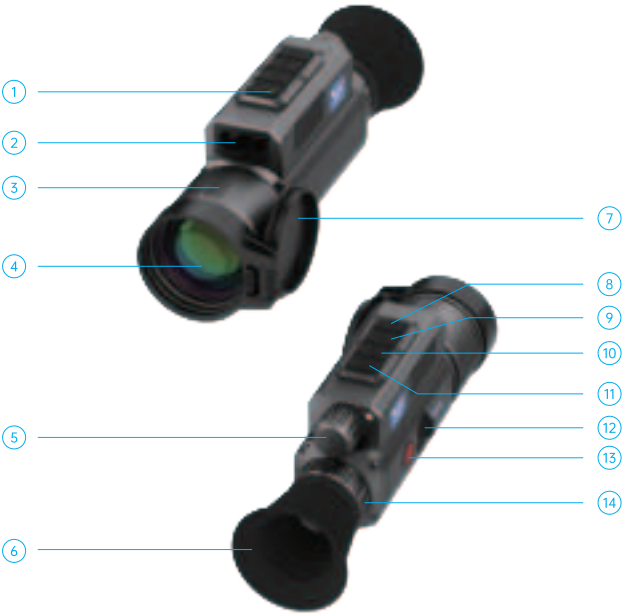
8. Technical Specifications 08

9. Maintenance and Care 11

1. Product Overview

1. The ME6-50L is an infrared thermal imaging Device designed for observation and ranging in nighttime and adverse weather conditions.
2. The infrared optical system captures the infrared radiation emitted by the target. The spectral filter reflects the distribution of the target's infrared radiation energy onto the photosensitive elements of the infrared detector array on the focal plane. The detector converts the infrared radiation into electrical signals, which are then amplified and processed by the readout circuit.
3. The core component digitizes the detector's output signals and performs initial infrared image correction, bad pixel elimination, brightness and contrast control, pseudo-color rendering, and overlay of interfaces and crosshairs. The processed signals are sent to the OLED display. The operator observes the infrared thermal imaging of the target through the 14X eyepiece.

2. Product Components



1. Device Indicator	2. Rangefinder Module	3. Objective Lens Focus Ring
4. Objective Lens	5. Battery Compartment Cover	6. Eyepiece Eyecup
7. Objective Lens Cap	8. Photo/Video Recording Button	9. Up Navigation Button
10. Menu Button	11. Down Navigation Button	12. Data Compartment Cover
13. Power Button	14. Eyepiece Focus Ring	

3. Package Contents

- ME6-50L Thermal Imaging Device
- 18650 Battery
- Carrying Case
- Type-C Data Cable
- User Manual
- 5V/2A Adapter
- Mount (with screws, hex nuts, and wrench)

4. Operation Instructions

4.1. Warnings

(1) Do not point the thermal imaging Device directly at high-intensity radiation sources such as the sun, CO_2 lasers, or welding machines.
(2) The interval between power cycles should be at least 20 seconds.
(3) The thermal imaging Device combines precision optical instruments and electrostatic-sensitive electronic components. Avoid dropping, striking, or vibrating the device to prevent structural deformation or misalignment.
(4) Do not disassemble the thermal imaging Device. Contact the manufacturer for any malfunctions to avoid voiding the warranty.
(5) Remove the battery when not in use or during transportation, and store the device in a protective case.
(6) Replace the battery promptly when it is low to avoid damage from over-discharge.
(7) Using the device outside the specified environmental conditions may cause damage.

4.2. Notes

(1) Clean non-optical surfaces with a clean, soft, dry cloth. Avoid chemical solvents or thinners.
(2) The infrared lens is coated with an anti-reflective film. Clean only when visibly dirty, using a dedicated lens cloth. Avoid touching the lens surface, as fingerprints can damage the coating.
(3) Power off the device when not in use to extend its operational life.

5. Button Functions

Power Button:

(1) Press and hold for 3 seconds to power on/off.
(2) Press and hold for 1-3 seconds to enter sleep mode. Short press to wake from sleep mode.
(3) Short press to refresh in observation mode.

Photo/Video Button

(1) Short press to take a photo.
(2) Press and hold for 1.5 seconds to start/stop video recording.

Up Navigation Button:

(1) Short press to navigate up or switch display modes.
(2) Press and hold to enable/disable picture-in-picture.

Menu Button:

(1) Short press to access the menu. Use navigation buttons to move through options.
(2) Press and hold to return to the previous menu level.
(3) Short press to lock/unlock rangefinder values when LRF is on.

Down Navigation Button:

(1) Short press to navigate down or switch magnification (1x, 2x, 4x, 8x).
(2) Press and hold to enable/disable rangefinder.

6. Menu Functions

Icon	Main Menu	Description
	Operation Modes	White Hot, High Contrast, Black Hot, Low Light, Fusion. Default: White Hot.  White Hot High Contrast Black Hot Low Light Fusion
	Video Output	Enable/Disable CVBS video output.
	WiFi	Turn on the WiFi function in the device menu, then enable WiFi on your smartphone and open the dedicated app. Locate the device's WiFi MAC address (e.g., "*--**") and connect by entering the password "12345678". Once the device and smartphone are connected via WiFi, you can observe real-time images captured by the device.
	Picture-in-Picture	On/Off.
	Reticle Type	Options: OFF, 10 types available.
	Reticle Color	Options: Black, White, Gray, Red, Green.
	Reticle Profiles	Save user-defined ballistic zeroing parameters.
	Reticle Zeroing Adjustment	Short press the menu button to freeze the image. Briefly press the REC button to move to the X and Y axis values, and use the up and down buttons to adjust the reticle position until it aligns with the impact point. Short press the REC button to move to other options. Once the settings are complete, navigate to the save option and briefly press the menu button to save and exit. Press and hold the menu button to exit without saving. The set distance will be saved as the zeroing point name in the zeroing storage menu.
	Gyroscope	On/Off.
	Rangefinder Unit	Meters/Yards.
	Rangefinder Settings	On/Off, Set timeout (5, 10, 20 minutes).
	Screen Brightness	Adjust brightness (10 levels).
	Brightness	Press the menu button to access the contrast menu, which offers 10 options. Selecting any option will adjust the imaging brightness accordingly.

	Contrast	Adjust contrast (10 levels).
	Image Detail Enhancement	Press the menu button to access the image detail enhancement option. The higher the value, the more details are enhanced.
	Date/Time	Select the "Date/Time" menu, briefly press the menu button to enter sub-options, use the menu button to navigate, and the up/down buttons to adjust values. Press and hold the menu button to save and exit after adjustments.
	Language Settings	Press the menu button to access the language settings menu. Use the up/down buttons to select the desired language, then briefly press the menu button to confirm.
	Audio Recording	Select "Audio Recording" and press the menu button to open the sub-menu. Select "On" or "Off" to enable or disable audio recording during video capture.
	Format	Enter the format sub-menu, briefly press the menu button to select "Confirm" or "Cancel". Please proceed with caution! Data cannot be recovered after deletion!
	Auto Power Off	Options: 3 minutes, 5 minutes, Off (default). After powering on, you can choose 3 or 5 minutes for auto power-off.
	Default Settings	Select "Default Settings" and press the menu button to open the sub-menu. Select "Confirm" or "Cancel" to restore default settings. Please proceed with caution as this will reset all settings to factory defaults.
	Pixel Fix	Turn on the device and confirm bad pixel correction in the function settings. If correction is needed, cover the lens cap and follow the prompts to repair bad pixels. Save after correction. Use the navigation buttons to move the cursor, the power button to switch options, and briefly press the menu button to save.
	Image Calibration	Enter the image calibration menu. If calibration is required, select "Confirm", cover the lens cap, and briefly press the menu button to calibrate background image uniformity. Calibration is automatically saved upon completion.
	Auto Ballistics	Options: On, Off, Settings. Selecting "On" enables auto ballistics, while "Off" disables it. "Settings" allows adjustment of ballistic parameters.
	Version	Select "Version"

7. APP Connection

Download the dedicated app on Android/iOS.

Download APP by Scanning the QR code according to the mobile phone system.

Download the APP

Enable WiFi on both the device and the phone.

Enter APP

Connect to the device's WiFi network
(default password:12345678)

8. Technical Specifications

74.55mm

248.7mm

ME6-50L

Sensor:	
Type	Uncooled Vanadium Oxide (VOx)
Resolution	640x512
Frame Rate	50 Hz
Pixel Size	12μm
NETD	⩽18mk
Optics:	
Objective Lens	50mm/F1.0
Base Magnification	2.8X
Digital Zoom	1x / 2 x/ 4 x/ 8x
Exit Pupil Distance	50 mm
Diopter Adjustment	+5/-5 D
Focus Distance	5m - ∞
Field of View	8.8°X6.6°
Detection Range	2500m (Target Size: 1.7m x 0.5m)

Display:	
Color Modes	White Hot, High Contrast, Black Hot, Low Light, Fusion
Type/Resolution	0.39 inch / OLED / 1024X768
Power:	
3D Gyroscope	Yes
Power Supply	3-4.2 V
Battery	18650 Li-ion, 3500mAh
External Power	5V (USB)
Runtime	5 hours
Shock Resistance	10000 J
Waterproof Rating	IP67
Operating Temperature	-20°C~+50°C
Size	248.7x74.55x82.6mm
Weight	729.6g
Recorder:	
Video/Photo Resolution	1024x768
Video/Photo Format	.mp4 / .jpg
Storage Card	Built-in 32GB Memory Card
Wireless Channel:	
Frequency	2.4GHz
Standard	802.11 b/g
WiFi Range	15m
Rangefinder:	
Wavelength	905nm

Maximum Range	1000m
Accuracy	+ /-1m

9. Maintenance and Care

(1) Power off the device when not in use to extend its operational life.
(2) Avoid touching the lens surface. Clean only when necessary using a dedicated lens cloth.
(3) Remove the battery during storage or transportation.
(4) Store the device in a cool, dry environment.
(5) Clean the exterior with a soft, dry cloth. Avoid chemical solvents.
(6) The thermal imaging Device lens should only be cleaned when visibly dirty. Avoid touching the lens surface, as the acidic substances left by fingerprints can damage the coating and lens surface. Use only a dedicated lens cloth for cleaning.
(7) Perform a power-on check and calibration every six months if the device is unused for an extended period.

FCC Warning Statement: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user' s authority to operate the equipment. 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.

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.

FCC Radiation Exposure Statement

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

Thermal Imaging & Night Vision
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