

Mini Series

Product User Manual

Thermal Imaging Device



MN2-19/25LRF

CONTENTS

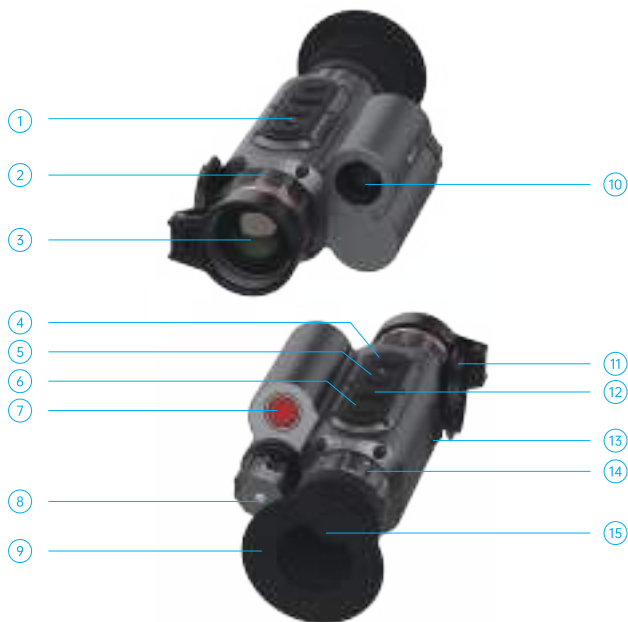
1. Product Overview	01
2. Product Components	02
3. Package Contents	03
4. Operation Instructions	03
5. Button Functions	05
6. Menu Functions	06
7. Device Connectivity	10
8. Technical Specifications	11
9. Maintenance and Care	14



1. Product Overview

1. The MN2-19/25LRF 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, Fusion 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. Objective Lens Focus Ring	3. Objective Lens	4. Photo/Video Recording Button (REC)
5. Up Navigation Button	6. Down Navigation Button	7. Power Button	8. Battery Compartment Cover
9. Eyepiece Eyecup	10. Rangefinder Module	11. Lens Cap	12. Menu Button
13. Data Compartment Cove	14. Eyepiece Focus Ring	15. Eyepiece Lens	

3. Package Contents

- ▶ MN2-19/25LRF 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, CO² 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 (NUC).



Photo/Video Button:

- (1) Short press to take a photo.
- (2) Press and hold for more than 1.5 seconds to start/stop 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.
- (2) Use navigation buttons to move through options. 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
	Mode Selection	The device provides 5 color palettes for option, White Hot, Green Hot, Black Hot, Red Hot, and Fusion. The default is "White Hot". When in the MENU operation interface, short press the navigation UP and DOWN buttons to switch different palettes, with a short press the MENU button to confirm and exit.      White Hot Low Light Black Hot Red Hot Fusion
	WiFi	1. Open the WiFi function in the machine MENU, open the mobile phone WiFi and the applicable software APP, find the MAC address name of the mobile phone WiFi "V3XXXXXXX", enter the password "12345678" to connect the device. 2. After the device and mobile phone are connected via WiFi, the real-time video can be observed on the mobile phone screen.
	Picture-in-Picture	Press the MENU button to enter the subpage, press "UP" or "DOWN" to select on or off, and short press the MENU button to confirm the selection.
	Reticle Type	The scope offers 10 different reticle styles, including an option to turn them off. By default, it displays Number 1 reticle.
	Reticle Color	The reticle color options include five choices: "Black, White, Gray, Red, and Green," with the default color set to "Black." To select the reticle color, briefly press the navigation button to access the "Reticle Color" option. Press the MENU button, and a list will appear on the right: "Black - White - Gray - Red - Green." Use the up and down navigation buttons to switch between selections, and press the MENU button briefly to confirm and return to the previous MENU. Upon initial startup, the default reticle color is set to white.
	Reticle Profiles	Used to save the ballistic zero point parameters set by the user. Press the MENU MENU button enter the sub-page, and press "up" or "down" to select the stored user ballistic zero point setting.

	Reticle Adjustment	Press the MENU button briefly to freeze the image. Press the photo button briefly to move to the X and Y axis values. Use the up and down buttons to adjust the crosshair position until it aligns with the impact point. Press the photo button briefly to move to other options. Once settings are complete, navigate to the save option and press the MENU button briefly to save and exit. Long press the MENU button to discard changes. The set distance will be saved in the zero storage MENU as the zero point name.
	Gyro	Press the MENU button to enter the sub menu. Use the "Up" or "Down" buttons to select either "On" or "Off," and briefly press the MENU button to confirm your selection.
	Laser Rangefinder Unit	Short press the navigation up and down keys to select the "Laser Rangefinder Unit" option. Short press the menu key to bring up a secondary menu on the right. Short press the navigation up and down keys to select the unit. There are two options for selecting the range unit: meters/yards.
	LRF Setting	Short press the navigation up and down keys to select the "Distance Measurement Settings" option, short press the menu key, a secondary menu will appear on the right side, short press the navigation up and down keys to select "Continuous Distance Measurement, 5-minute Distance Measurement, 10 minute Distance Measurement, 20 minute Distance Measurement", confirm and return to the previous menu.
	OLED Brightness	Briefly press the UP and Down navigation buttons to select the "OLED Brightness" option. Then, press the MENU button, and a secondary MENU will appear on the right. Use the UP and Down navigation buttons to choose the brightness level; the OLED Brightness increases with higher values, from dim to bright. Confirm and return to the previous MENU.
	Image Brightness	The brightness adjustment allows you to increase or decrease the brightness of the image. There are 10 brightness levels available, ranging from dim to bright. The default brightness setting upon initial startup is "5." Users can select an appropriate brightness level based on personal viewing preferences and current environmental conditions. Briefly press the UP and Down navigation buttons to select the "Brightness" option. Then, press the MENU button, and a secondary MENU will appear on the right. Use the UP and Down navigation buttons to choose the desired level, and confirm to return to the previous MENU.

	Contrast Ratio	The contrast Ratio adjustment allows you to increase or decrease the contrast ratio of the image, making the target more distinct. Contrast levels range from 1 to 10, progressing from weak to strong. The default contrast ratio setting upon initial startup is "5." Users can select an appropriate contrast level based on personal viewing preferences and current environmental conditions. Briefly press the up and down navigation buttons to select the "Contrast Ratio" option. Then, press the MENU button, and a secondary MENU will appear on the right. Use the up and down navigation buttons to choose the desired level, and confirm to return to the previous MENU.
	Image Detail Boost	Press the MENU button to access the "Image Detail Boost" option. The higher the numerical value, the more details are enhanced.
	Date/Time	Select the 'Date/Time' MENU, then briefly press the MENU button to enter sub-options. Use short presses of the MENU button to navigate between options, and use the up/down Buttons to adjust values. Once adjustments are complete, briefly press the MENU button again to save and exit.
	Language	The The device has English and other languages set up, and users can make settings according to their needs. The default multi-language setting when leaving the factory is English. Press the navigation UP and DOWN buttons briefly to select the "Multi-language" option, then press the MENU buttons briefly. A secondary MENU will appear on the right side. Press the navigation up and down buttons briefly to select the appropriate language, confirm and return to the previous MENU level. Press and hold the MENU button to exit without saving.
	Audio Recording	Select "Record Audio" with the cursor and press the MENU button to bring up a sub menu. Select 'Open' or 'Close' on the sub menu to enable recording with or without voice and audio input.
	Format	Press the MENU button briefly to enter the Advanced Settings sub menu. Use the up and down navigation buttons to adjust the option to "Format Storage Card." Press the MENU button again to select "Confirm" or "Cancel". Please choose Confirm carefully! Data cannot be recovered once deleted!
	Auto Power Off	After selecting "Default Settings," press the MENU button to access the sub menu. In the sub menu, choose from "3 minutes," "5 minutes," or "Off." The default setting is "Off." After powering on, you can select automatic Power Off after 3 or 5 minutes.

	Default Settings	After selecting 'Default Settings' with the cursor, press the MENU button to open the sub menu. On the sub menu, choose 'Confirm' or 'Cancel' to restore default settings. If confirmed, the system will revert to factory default settings—please proceed with caution.
	Pixel Fix	Press the MENU button to enter the main MENU and select Pixel Fix. Follow on-screen prompts: "Point the device at a uniform surface and press MENU" → Press MENU "Calibration in progress..." (Automatic correction initiates) "Calibration successful!" → System auto-returns to the previous MENU.
	Image adjustment	Select Image Calibration from the MENU. Follow prompts: "Cover the lens cap and press MENU" → Press MENU "Calibration started" (Automatic process) "Calibration complete" → Auto-exit to previous MENU.
	Auto Ballistic Calculator	Short press the navigation button to select the "Auto Trajectory" option, press the menu button to confirm, turn on, off, and set. Selecting 'on' indicates the activation of automatic ballistics. Selecting 'off' means turning off automatic ballistics. Select settings to adjust trajectory parameters.
	Version	Press the navigation buttons briefly to select the "Version Information" option, then press the MENU button to confirm. This will display the software version information of the device.

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.



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



Enter APP

8. Technical Specifications



83.2mm

56.3mm



185.3mm

MN2-19/25LRF

Sensor:	
Type	Uncooled Vanadium Oxide (VOx)
Resolution	256x192
Frame Rate	50 Hz
Pixel Size	12μm
NETD	≤30mk
Optics:	
Objective Lens	19/25mm/F1.0
Base Magnification	2.7X/3.5X
Digital Zoom	1x / 2 x/ 4 x/ 8x
Exit Pupil Distance	50 mm
Diopter Adjustment	+5/-5 D
Focus Distance	2m - ∞
Field of View	9.2°×7°/7°×5.3°
Detection Range	900m/1300m (Target Size: 1.7m x 0.5m)

Display:	
Color Modes	White Hot, Low Light, Black Hot, Red Hot, 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	185.3x83.2x56.3mm
Weight	524g
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.



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