Thermal Sight

Specification

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Product Description

This thermal imaging sight is equipped with a 640×512 resolution infrared detector featuring extremely high thermal sensitivity, enabling clear detail recognition even in the harshest weather conditions. The sight integrates functions such as artificial intelligence-based target recognition, target tracking, and intelligent ballistic calculation. It is primarily used in scenarios such as hiking, hunting, and search and rescue.

Features

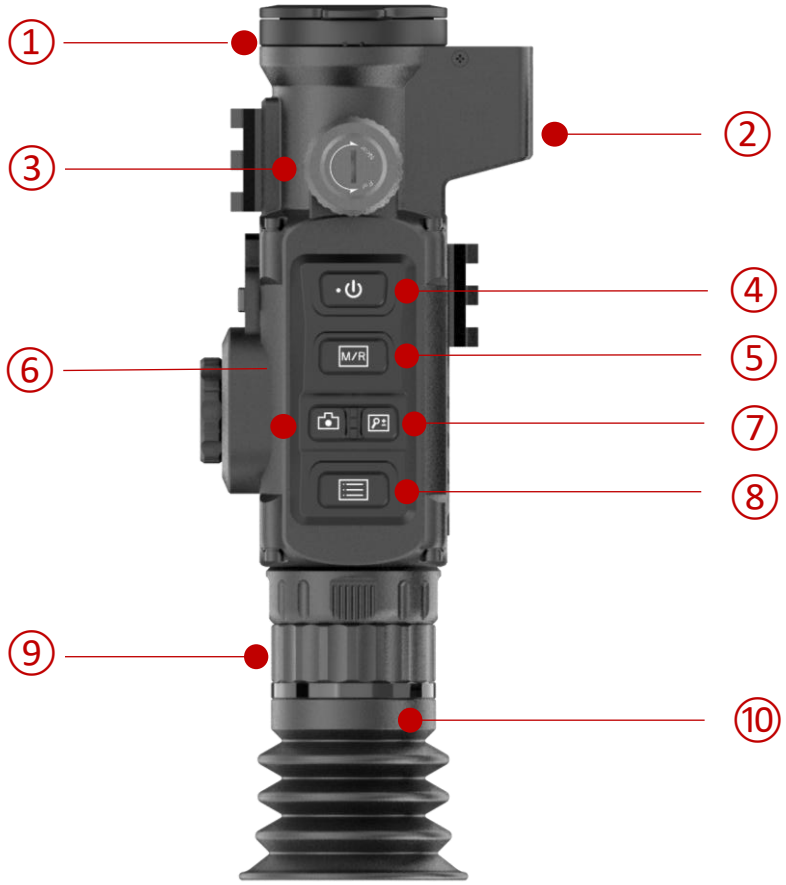
- 12um uncooled infrared detector, NETD≤20mk;
- 1024*768 resolution with 0.39 inch OLED display;
- AI-based automatic target recognition function
- Stable and reliable automatic target tracking function
- Various pseudo colors for different scenarios;
- Intelligent ballistic function
- Compact size and light weight

Application Scenarios

- Animal Observation
- Outdoor Adventure
- Security Law Enforcement
- Emergency Search and Rescue

Components and Buttons

① Objective lens
② Laser rangefinder
③ Focus knob
④ Power button
⑤ Mode/Return button
⑥ Capture/Left button
⑦ Zoom/Right button
⑧ Menu/Confirm button
⑨ Diopter adjustment ring
⑩ Ocular lens



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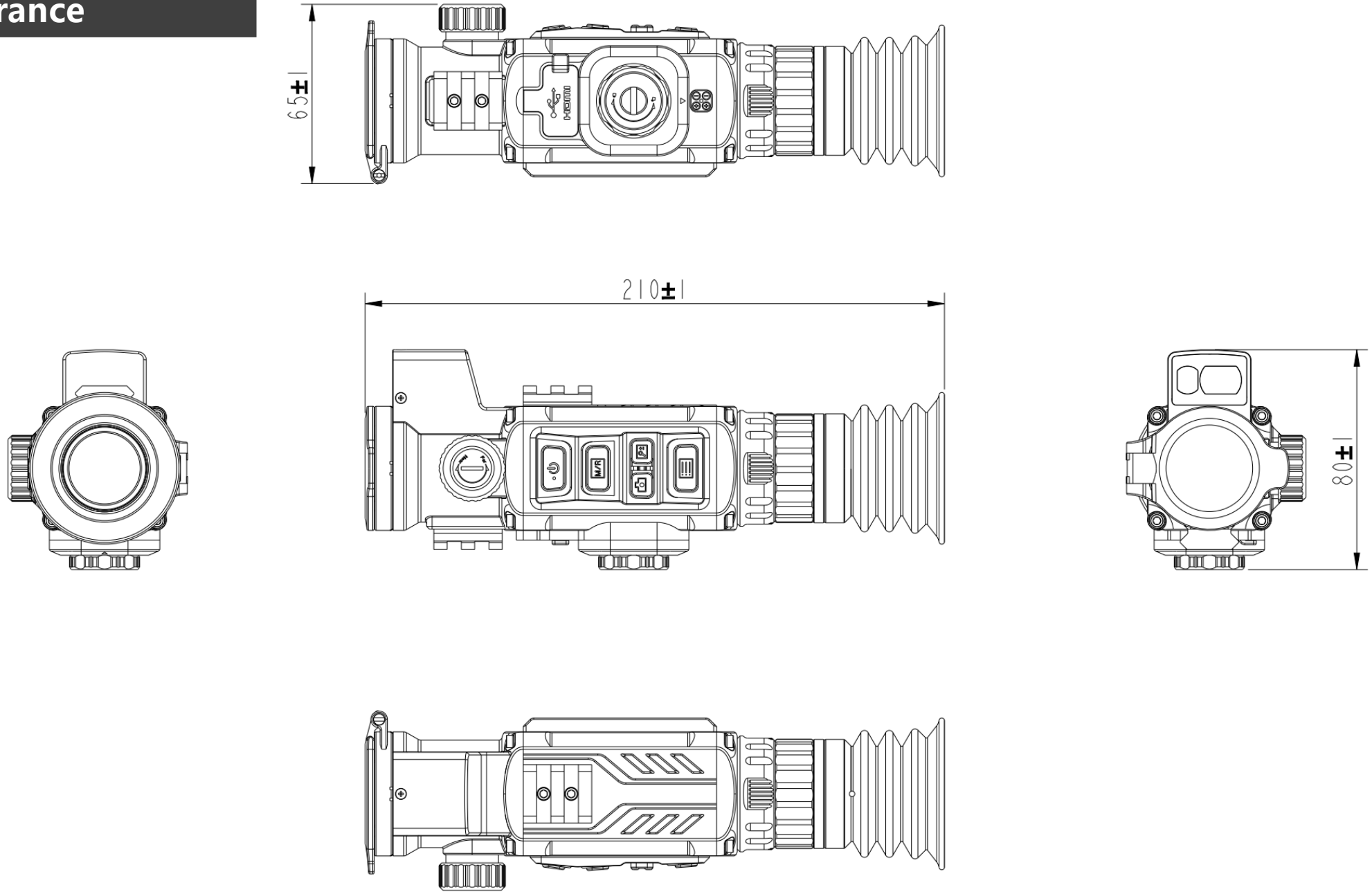
Product Specification

Item category	Explorer650-LRF	Explorer635-LRF
Infrared module		
Image Sensor	UFPA (VOx)	UFPA (VOx)
Resolution	640×512	640×512
Pixel pitch	12μm	12μm
Frame rate	50Hz	50Hz
NETD	≤20mk	≤20mk
Spectral range	8-14μm	8-14μm
Optical parameter		
Focal length / Aperture	50mm; F1.0	35mm; F1.0
Field of view	8.7°×7.0°	12.5°×10.0°
Focus Mode	Focus Knob	Focus Knob
Eye relief / Exit pupil	40mm / 6mm	40mm / 6mm
Diopter	+5D to -5D	+5D to -5D
Detection Range	3.5km (Human; 2pixels)	2.4km (human; 2pixels)
Recognition Range	590m (Human; 12pixels)	410m (Human; 12pixels)
Image Display		
Screen	AMOLED, 0.39 inch	AMOLED, 0.39 inch
Resolution	1024×768	1024×768
Brightness Adjustment	Support	Support
Color Palette	White Hot/Black Hot/Red Hot/Fusion/Golden Hot etc.	
Digital Zoom	1×; 2×; 4×	1×; 2×; 4×

Item category	Explorer650-LRF	Explorer635-LRF
Power supply		
Battery type & number	4 Lithium batteries	4 Lithium batteries
Battery parameter	16340(800mah)	16340(800mah)
External power supply	DC 5V (USB Type-C)	DC 5V (USB Type-C)
Power Consumption	≤2.5W (25℃)	≤2.5W (25℃)
Battery Operating time	≥4h (25℃)	≥4h (25℃)
Peripheral		
Electronic compass	Support	Support
Attitude sensor	Support	Support
WIFI / Bluetooth	Support; 2.4G	Support; 2.4G
Storage	Built-in EMMC (32GB)	Built-in EMMC (32GB)
Distance Measurement	Laser, 905nm	Laser, 905nm
Ranging distance & accuracy	1Km; ±1m	1Km; ±1m
General		
Video Output Interface	Micro HDMI (Type D)	Micro HDMI (Type D)
Data transmission Interface	USB (Type-C)	USB (Type-C)
Protection level	IP67	IP67
Operating temperature	-20°C to +50°C	-20°C to +50°C
Max. Recoil	1000g/0.4ms	1000g/0.4ms
Weight (without battery)	≤630g	≤525g
Dimension	225×95×65 (mm)	210×80×65 (mm)

Appearance



Appearance

Appearance

Appearance

Button Instruction

Button	Status	Operation	Function
Power Button (⏻)	Power off	Long press	Turn on device
	Power on	Long press	Shut down device
	Home screen	Short press	Enter/Exit standby mode
Mode Button (M/R)	Home screen	Long press	Select shortcut function
		Short press	Selected shortcut function
	Main menu	Long press	Return to home screen without saving
		Short press	Return to upper-layer menu without saving
Capture Button (📷)	Home screen	Short press	Screenshot
		Long press	Start/Stop video recording
	Main menu	Short press	Left navigation
Zoom Button (🔍±)	Home screen	Short press	Digital zoom
		Long press	Picture-in-picture mode
	Main menu	Short press	Right navigation

Button	Status	Operation	Function
Menu Button (☰)	Home screen	Long press	Enter main menu
		Short press	Change pseudo colors
	Main menu	Long press	Return to home screen and save
		Short press	Enter submenu/ Confirm selection
Capture + Zoom	Home screen	Simultaneously	Laser ranging
Capture + Mode	Home screen	Simultaneously	Show/Hide icons
Zoom + Mode	Home screen (When target tracking function is enabled)	Simultaneously	Target locking/Relocking

Icon Description

Icon	Function
	Color palette
	Digital zoom
	Laser ranging
	Image calibration
	Reticle calibration
	Reticle adjustment
	Screen adaptation
	Screenshot
	Video Recording
	Defective pixel correction
	Multi-media playback
	Picture in picture display
	Brightness adjustment
	Contrast adjustment
	Image enhancement

Icon	Function
	AI intelligence recognition
	Intelligent target tracking
	Hot tracking
	Smart ballistics
	System setting
	Advanced settings
	Wireless network
	Screen brightness adjustment
	Turn off icon display
	Time setting
	Compass calibration
	System upgrade
	Formatting
	System information
	Factory mode

Inspection

An inspection of the device is recommended before use.

- Check the appearance of the device (should be no cracks in the casing).
- Check the condition of the lens and eyepiece (should be no cracks, greasy spots, dirt or other deposits)
- Check the condition of the rechargeable batteries (should be fully charged) and the electrodes (should not be oxidized or corroded).

Maintenance

Maintenance should be performed at least twice a year, including the following actions：

- Wipe and clean the surfaces of metal and plastic parts free of dust and dirt with a cotton cloth.
- Clean the electrical electrodes of the battery and the battery compartment using a non-greasy organic solvent.
- Check the glass surfaces of the eyepiece and the lens. If necessary, it is best to use a non-contact method to clean the lens surface of dust and stains.
- It is best to use a special cleaner to clean the outer surface of the optical component