

Thermal imaging device

ZEN C Series

User Manual

FCC ID:2BGU2-ZENC50
FCC ID:2BGU2-ZENC35
FCC ID:2BVLG-ZEN-C50R

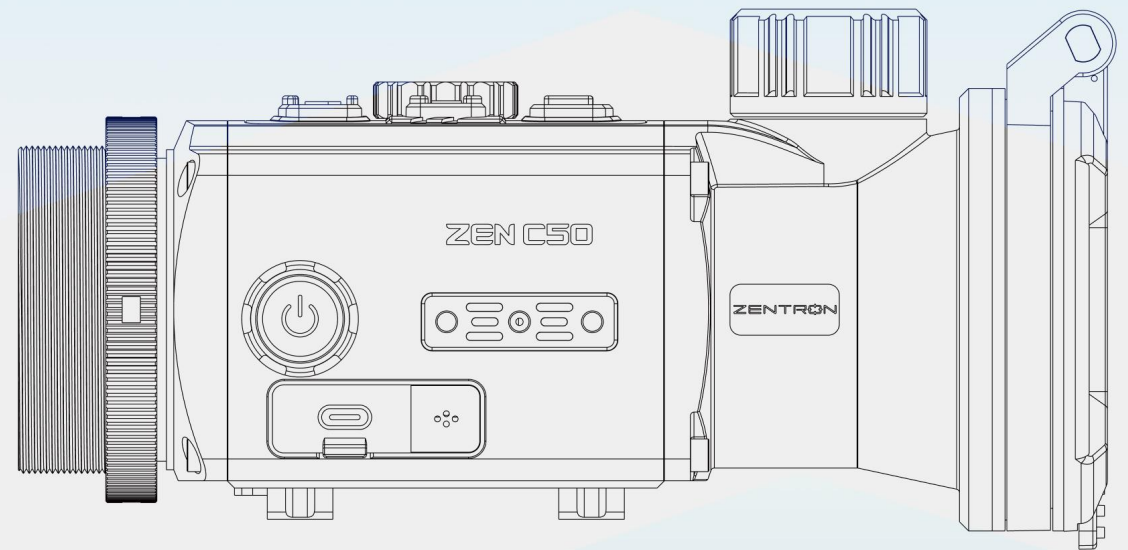


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1. Important Safety Information

1.1 Environmental Warnings

- Avoid direct exposure of lens to intense light sources such as the sun or lasers.
- Operating temperature: -20°C to +50°C
- Do not store at extreme temperatures.
- When used in extremely cold environments, the battery life of the device will be reduced. This is normal and does not indicate a malfunction of the device.

1.2 Ergonomics and Handling

- Take breaks during extended use to avoid fatigue.
- Keep out of reach of children – small parts may be hazardous.
- After using the device, please close the lens cover of the device to prevent sharp objects from scratching the lens of the device.
- Disassembling or repairing equipment through unofficial channels will invalidate the repair policy.

1.3 Battery and Charging Safety

- Use only manufacturer-approved 18350 batteries.
- Do not reverse battery polarity.
- Only charge between 0°C and 50°C.
- Never leave batteries unattended during charging.
- When the device is idle for a long time, the battery should be removed.
- Do not use 18350 batteries with USB charging interface, as it will damage the device charging compartment.

2. Specifications

Category	C50R	C50	C35
Detector Type	VOx Uncooled	VOx Uncooled	VOx Uncooled
Resolution	640 x 512	640 x 512	384 x 288
Pixel Size	12µm	12µm	12µm
Framerate	50Hz	50Hz	50Hz

Spectral Range	8~14μm	8~14μm	8~14μm
NETD	≤18mK	≤20mK	≤20mK
Safety class for laser	Class 1	-	-
Wavelength	905nm	-	-
Max. measuring range	1200m(1312 yards)	-	-
Measurement accuracy	±1	-	-
Min. measuring range	5m(5.47 yards)	-	-
Objective Lens	50mm f1.0	50mm f1.0	35mm f1.0
Field of View	8.7°(H) x 7°(V)	8.7°(H) x 7°(V)	7.5°(H) x 5.6°(V)
Close-up Range	5m(5.47 yards)	5m(5.47 yards)	5m(5.47 yards)
Detection Range	2600m (2800 yards)	2600m (2800 yards)	1800m (1950 yards)
Optical Magnification	1x	1x	1x

E-Zoom	Clip-on mode: 1x; Monocular mode: 2.3~18.4x	Clip-on mode: 1x; Monocular mode: 2.3~18.4x	Clip-on mode: 1x; Monocular mode: 2.3~18.4x
Palettes	White hot/Black hot/Iron red/Tint...	White hot/Black hot/Iron red/Tint...	White hot/Black hot/Iron red/Tint...
Start-up Time	<5 seconds	<5 seconds	<5 seconds
WiFi, Bluetooth & Mic	Support	Support	Support
Sensors	Built-in accelerometer and digital compass	Built-in accelerometer and digital compass	Built-in accelerometer and digital compass
Built-in Memory	64GB	64GB	32GB
Display Type	OLED	OLED	OLED
Display Resolution	1920*1080	1920*1080	800*600
Battery	2 x 18350	2 x 18350	2 x 18350
Max. Battery Life	6 hours	6 hours	7 hours

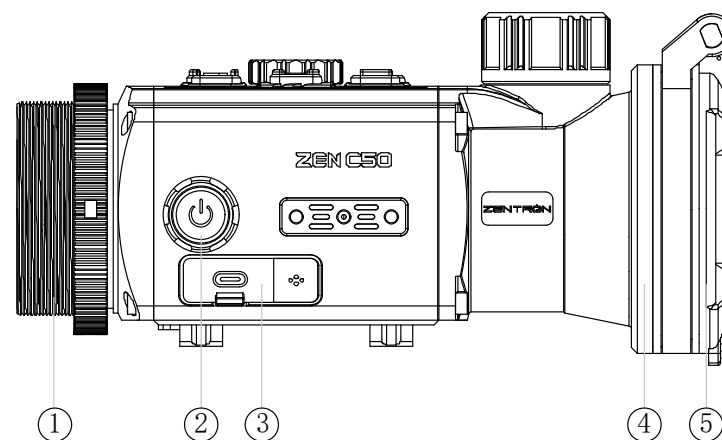
USB Interface	Type-C	Type-C	Type-C
Size	147 x 65 x 74mm (5.78 x 2.55 x 2.91 inch)	147 x 65 x 74mm (5.78 x 2.55 x 2.91 inch)	142 x 65 x 63mm (5.59 x 2.55 x 2.48 inch)
Weight	425g (14.99 oz)	390g (13.75 oz)	410g (14.46 oz)
Connection Thread	M45 x 0.75	M45 x 0.75	M45 x 0.75
Housing Material	Magnesium	Magnesium	Magnesium
Protection Level	IP67	IP67	IP67
Operating Temp	-20°C~50°C (-4°F~122°F)	-20°C~50°C (-4°F~122°F)	-20°C~50°C (-4°F~122°F)
Storage Temp	-40°C~50°C (-40°F~122°F)	-40°C~50°C (-40°F~122°F)	-40°C~50°C (-40°F~122°F)
Max. Recoil	1000g/0.4ms	1000g/0.4ms	1000g/0.4ms

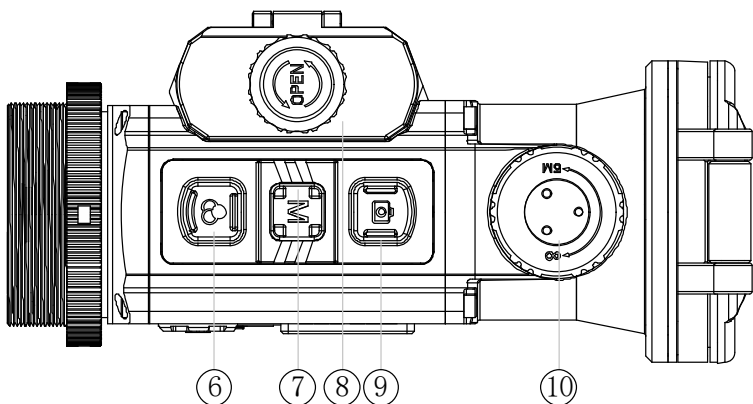
3. Features

- High-sensitivity thermal sensor

- AMOLED display with adjustable brightness
- Multiple thermal palettes
- Built-in microphone and video recorder
- Prerecord
- Multiple zero profiles
- Pixel correction utility
- Wi-Fi & Bluetooth enabled

4. Components and Controls





No.	Component
1	Eyepiece
2	Power button
3	USB-C port
4	Objective lens
5	Lens cap
6	Palettes button
7	Menu button
8	Battery cover
9	Capture button
10	Lens focus knob

5. Button Operation

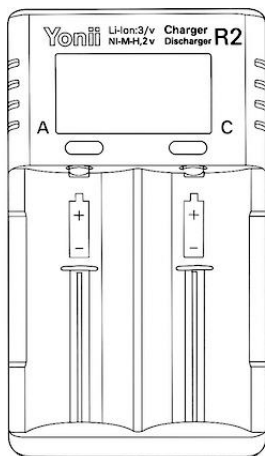
C35/C50		
Button	Short Press	Long Press
	Standby mode/Wake up device	Power on/off
	Quick menu	Main menu
	Switching palettes	NUC
	Take a picture	Start/stop recording video

C50R		
Button	Short Press	Long Press
	Standby mode/Wake up device	Power on/off
	Quick menu	Main menu
	Measure Distance	NUC
	Take a picture	Start/stop recording video

6. Battery Charging Instructions

Compatible Battery:

Supports only **18350 lithium-ion rechargeable batteries**.



Charging Steps:

1. **Insert Batteries:**

Place the 18350 batteries into the charger, matching the correct polarity (+/-) as indicated.

2. **Power On:**

Connect the charger to a USB power source using the included USB-C cable.

3. **Monitor Charging:**

Charging status and battery level are displayed on the **LCD screen**. The screen shows real-time voltage, charging progress, and battery condition.

4. **Important Notes:**

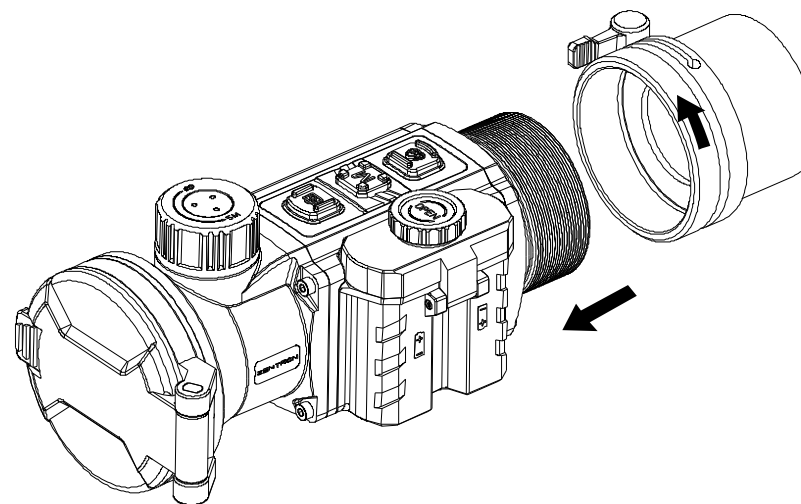
- Do not reverse battery polarity.

- Do not use 18350 batteries with a built-in USB port.
- Only charge between **0°C and 50°C**.
- Remove batteries when not in use for extended periods.
- Avoid overcharging or leaving the charger unattended.

7. Installation

Installation Method 1:

To connect the device to a day scope, an adapter must be installed first. Rotate the adapter counterclockwise to tighten it and connect it to the device.

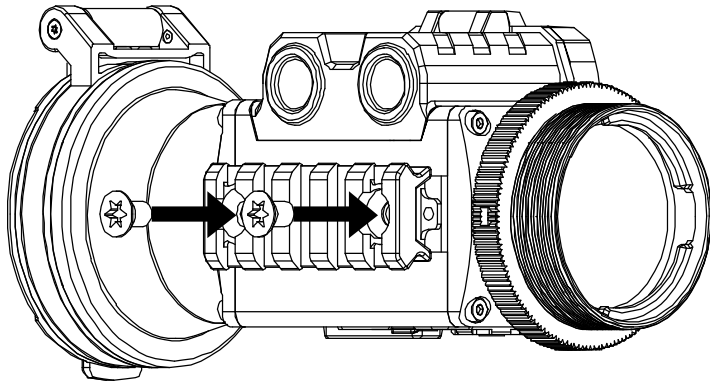


Installation Method 2:

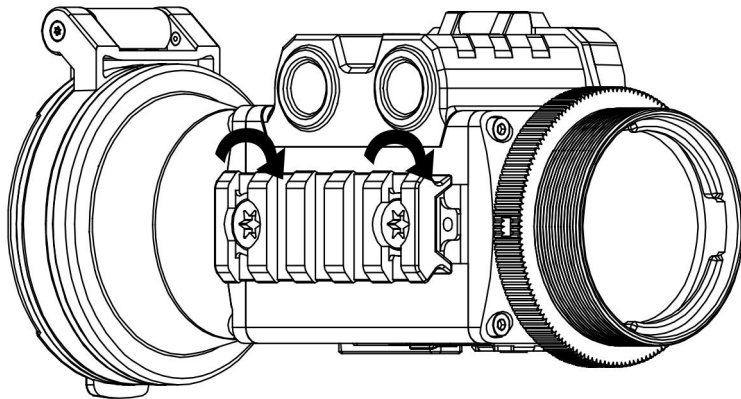
Before starting, please clean the base of the device and the ZEN C Series Mount with a lint-free cloth.

The ZEN C Series Mount is available in two size options: 1.5 inches and 1.7 inches. Their part numbers are ZT-AC0215 and ZT-AC0217, respectively. The part number for the Quick Release Mounts is ZT-AC02.

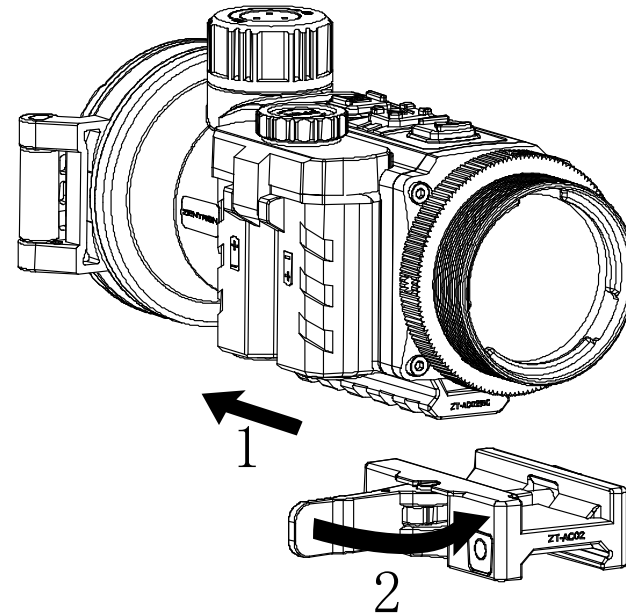
- Align the mounting holes on the device and the ZEN C Series Mount.



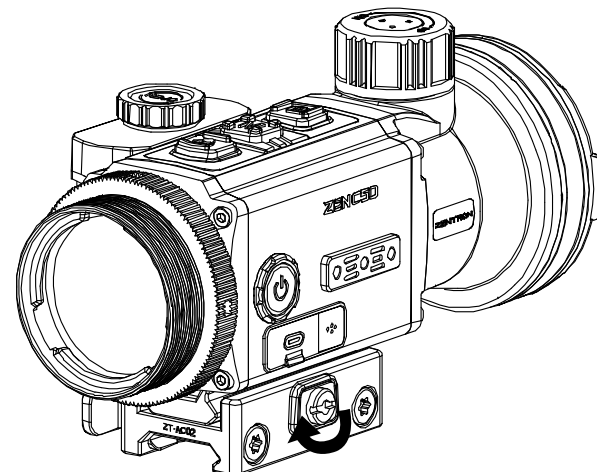
- Insert and tighten the screws.



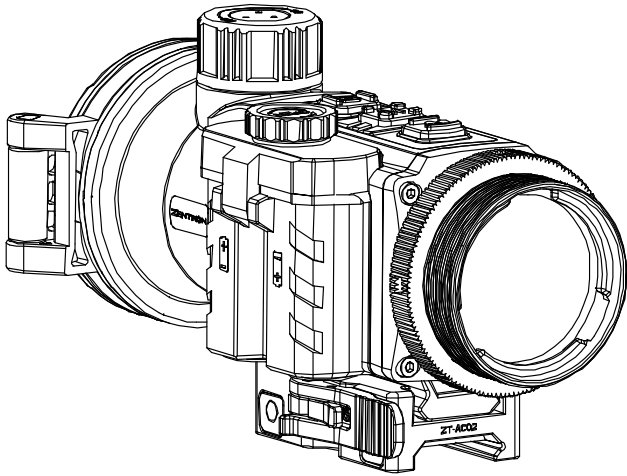
- Mount the device onto the Quick Release Mounts and close the latch.



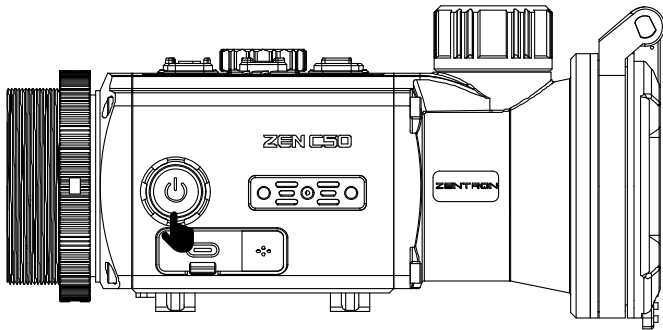
- Tighten the screws.



The final result is shown in the image below:



8. Startup & Standby



Powering On:

- Hold Power button (~3s) until ZENTRON logo displays.

Powering Off:

- Long press the Power button until the screen turns off.

Standby Mode:

- Short press Power to enter/exit standby.
- Auto standby available in menu settings (3–10 min).

9. Focusing

Objective Lens Focus:

- Rotate lens ring until target object appears clear. If the target distance changes, refocus accordingly.

