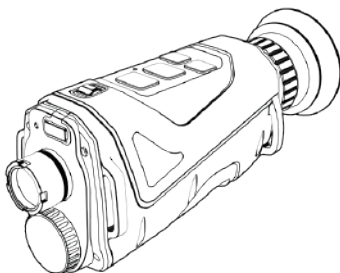




Handheld Thermal Monocular



MV2 Pro

Product User Manual

1.Introduction

1.1 Device Description

The handheld observation Thermal Imaging Monocular telescope is equipped with a 256×192 infrared detector and a 1.43-inch AMOLED display. It supports observation, maximum temperature target tracking, Wi-Fi image transmission and other functions. The monocular telescope is mainly used in outdoor search and rescue, bird watching, camping, hiking, tourism, hunting and other scenes.

1.2 Features

- Adopt high-performance AI chip and image detail enhancement technology.
- Support wireless hotspot connection and mobile phone APP connection.
- Built-in memory module supports video recording and photo taking.
- Replaceable and rechargeable 18650 battery, which can be used continuously for 8 hours after charging.
- Support firmware update via USB flash drive and APP.

1.3 The Main Function

AI Super Resolution

Super resolution enhanced to 384×288 .

Hot Spot Tracking

Detect the highest temperature spot in the scene and mark it on display.
in the scene and mark it on display.

Internet Function

Support hotspots, add Thermal Imaging Monocular through mobile phone APP to realize functions such as capture, record, and parameter configuration.

Storage

Built-in storage (up to 32G), supports video recording and taking pictures.
Supports exporting videos and photos to a PC via USB-C connection.

Digital Zoom

Support 1.0x, 2.0x, 4.0x, 8.0x

APP

A software that can obtain real-time video of the Thermal Imaging Monocular and control the Thermal Imaging Monocular

Scene Mode

Normal mode, Outline mode, City mode, Forest mode, Rainforest mode, Bird watching mode.

Color Mode

Black hot, White hot, Red hot, Iron red hot , Green hot.

Data Transmission (USB-C interface)

Supports data transmission, USB-C to HDMI output, external CVBS display.

1.4 Standard Components



Thermal
monocular x1



Manual x1



Lens cleaning cloth



Wrist strap x1



USB-C cable x1



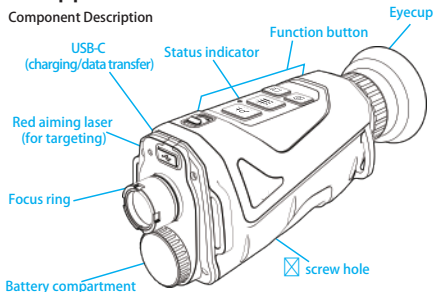
EVA bag x1



18650 Battery x1

2.Appearance

Component Description



BUTTON	FUNCTION
 POWER	Short press: laser on/off; Long press: power on/off;
 ZOOM±	Press: digital zoom Hold: CVBS on/off
 MODE	Press: switch color palettes Hold: menu operation Menu navigation: confirm
 CAPTURE	Press: capture snapshot Hold: switch scene Menu navigation: cursor up
 RECORDING	Press: start/stop record video Hold: WiFi-AP on/off Menu navigation: cursor down
MODE+ZOOM	Screen: on/off
STATUS INDICATOR	Red light: flashing-abnormal charging; always on - charging; off - fully charged; Blue light: on once - device turned on; flashing -device upgrade;

Steps

①Please open the USB port sealing cover on the back of the device when charging.

②Use the USB power cable to connect the device's USB port for charging.

Charging Tips:

Red light flashing: indicates that the device is charging abnormally.

Red light always on: indicates that the device is charging.

Red light off: indicates that the device is fully charged.

3.Product Specifications

Model	Caseeda MV2 Pro
Detector resolution	256x192
Ai super resolution	384x288
Pixel size	12 μ m
NETD	$\leq$ 40mk
Response band	8 μ m ~14 μ m
Lens (focal length)	10mm / 15mm
Aperture	F=0.95
Field of view	18.00° *13.55° / 11.69° * 8.78°
Screen refresh rate	50 Hz
Digital zoom	1×、2×、4×、8×
Display	1.43-inch AMOLED display
Scene mode	Normal, Outline, City, Forest, Rainforest, Birdwatching
Color mode	Black hot, White hot, Red hot, Green hot, Iron red hot
Hot spot tracking	Support
Wi-Fi AP/STA	Support
Standby mode	Support
Storage	Built-in 32 GB
Recording video	Support
Capture snapshot	Support
CVBS output	Support (via USB-C)
HDMI output	Support (via USB-C)
Battery life	More than 8 hours(@25° C,Wi-Fi OFF)
Battery capacity	3.7V 3200mAh
Operating temperature	-20° C~ 60° C
Protection level	IP66
Size	170*80*61.5mm
Weight	About 238g

4.Functional Description

1. Power On/Off

The Thermal Imaging Monocular starts up. When it is powered off, press and hold the power button for 2 seconds. The indicator light turns Blue and the startup screen appears in the eyepiece. When it is powered on, press and hold the power button for 2 seconds to shut down the thermal imager.

2.Menu Description

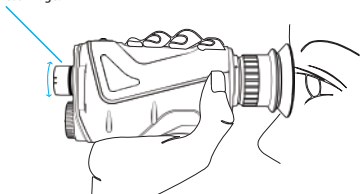
In the main preview interface of the Thermal Imaging Monocular, long press the Mode button to enter the main menu.

3. Image Adjustment

By adjusting the image's pseudo color mode, brightness, scene mode, NUC and other functions, the image can be displayed with the best effect.

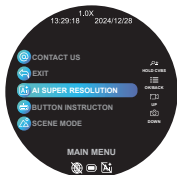
3.2 Adjusting The Focus

Use the focus ring to adjust the focus of the Thermal Imaging Monocular obtain the clearest image.



4. AI Super Resolution On/Off

AI super-resolution on/off, on by default, AI super-resolution technology improves the display effect to the same as the display effect of the sensor with 384*288.



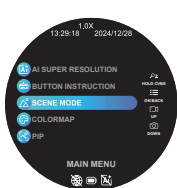
Turn Off AI



Turn On AI



5. Scene Mode



Normal



Outline



City



Forest



Rainforest



Birdwatching

6. Brightness Adjustment

1. When the device is powered on, long press the Mode button to enter the main menu and select Brightness Adjustment
2. Short press to adjust the screen brightness in levels 1 2 3 4 5.

7. Color Mode

For the same scene or target, different pseudo color modes can produce different display effects. In the main preview interface, press the Mode key to switch.



White hot



Black hot



Red hot



Green hot



Iron red hot

8. Recording Function

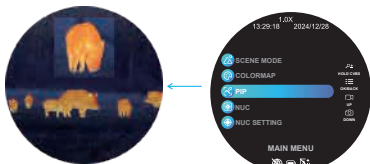
1. When the device is powered on, short press the record button to start recording video. The recording icon and time will be displayed in the upper left corner of the image.

9. Capture Function

1. When the device is powered on, short press to capture the image.
2. When recording a video, short press to capture a picture, and the capture output icon will appear above the image;

10. Picture-In-Picture

The Picture-in-Picture function captures a partial image of the center of the scene, enlarges the partial image, and overlays it on the main preview interface, making it easier to see the details of the key image.



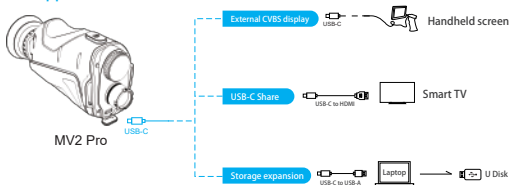
Operation Steps:

- ① Long press the MODE key to enter the main menu
- ② Select PIP, short press the key to turn PIP on/off.

11. Expansion Devices

Can connect external devices via USB-C, CVBS output, HDMI output, microphone input, etc.

12. Support USB-C to connect external devices



13. Network Connection

The Thermal Imaging Monocular supports Wi-Fi or hotspot connection to the network for network access.

When the battery level of the thermal imaging is less than 15%, the Wi-Fi and hotspot functions will be automatically turned off.

13.1 Set Up Hotspot Connection

Turn on the device hotspot mode, and use your mobile phone to directly connect to the device hotspot. After establishing a connection through the hotspot, connect the device to the app.

Operation Steps

- ① Press and hold the Mode button, select the NETWORK menu, and select the AP option.
- ② Turn on Wi-Fi on your phone and connect to the thermal imager AP hotspot.
 - Wi-Fi name: Caseeda_MV
 - Wi-Fi password: 12345678
- ③ Open the App, select the Thermal Imaging , and wait for the scan to complete. Click to connect the device, then enter the preview and control interface to perform operations such as live preview, video recording, parameter configuration, and media file sharing.



Note: The device serial number can also be confirmed by referring to the instructions for Viewing Device Information.

13.2 Set Up Wi-Fi Connection

Turn on the device Wi-Fi mode, set the mobile phone hotspot or router name as the device Wi-Fi name, and then the device will automatically connect to the mobile phone hotspot or router Wi-Fi. The mobile phone is connected to the same router Wi-Fi. After the network connection is established, connect the device to the app.

Operation Steps

- ① Press and hold the Menu button, select the NETWORK menu, and select the Wi-Fi option.
- ② Turn on the mobile phone hotspot and set the following parameters. Or modify the router to the following parameters.
 - Wi-Fi name: Caseeda_MV
 - Wi-Fi password: 12345678
- ③ Wait a moment, the device will automatically connect to your mobile hotspot or router.

14. BROAD VISION App

Introduction

Caseeda_MV App is a mobile thermal imaging app designed to work seamlessly with Caseeda-branded thermal imaging devices. It enables real-time display and control of Caseeda thermal imaging equipment, offering functionalities such as photo capture, video recording, pseudo-color palette switching, device mode adjustments, and thermal imaging device firmware upgrades.

Install

Prerequisites:

The phone system must be iOS 12 or above, or Android 7.0 or above.



As the products are constantly updated and upgraded, the company reserves the right to make changes at any time without prior notice.

15.1 Firmware Update Via PC

Please download the corresponding upgrade package from the official website "www.caseeda.net".

Copy MD5 and IMG to the Root storage file of "MV2 Pro Device".

1. Long press the mode button
2. Select menu
3. System
4. PC upgrade



15.2 Firmware Update Via U Disk

Please download the corresponding upgrade package from the official website "www.caseeda.net".

Copy MD5 and IMG to the Root storage file of "MV2 Pro Device".

1. Long press the mode button
2. Select menu
3. System
4. USB upgrade



15.3 Firmware Update Via BROAD VISION APP

Connect to the device using your phone.

Go to the device settings page and click Firmware Update. The software will download the latest firmware data from the server to the phone.

After all the firmware data is sent to the MV2 Pro device, the device will automatically restart and



■ 5. Notes

1. The rated charging voltage of this product is DC5V. Please charge it in time when the battery is low to avoid over-discharge of the battery and reduce the life of the thermal imager.
2. This product is not recommended for long-term use in high temperature environment. The thermal imager will enter high temperature protection state and automatically shut down.
3. The recommended operating temperature of the product is $-20^{\circ}\text{C}\sim 60^{\circ}\text{C}$.
4. When using in a water environment, please first confirm that the USB interface cover on the top of the thermal imager is tightly closed.
5. In any case, avoid direct exposure of the thermal imager to strong radiation sources such as the sun and laser to avoid irreversible damage to the thermal imager.
6. When the thermal imager is not used for a long time, charge it at least once every 2 months during storage and store it in a dry and ventilated environment.
7. For thermal imagers equipped with red dot indicators, do not expose the red dot indicator to human eyes.
8. Do not charge in an environment above 40°C .