



Owner's Manual

Infinity Series Thermal Monocular

TM105

DISCOVER THE UNSEEN.

XVISIONOPTICS.COM

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- IMPORTANT -

Thank you for choosing this product. Please read this guide before use and keep it for future reference. We hope you'll be satisfied with this product.

This guide is a general guide for a series of products, which means that the specific model you receive may differ from the picture in the guide. Please refer to the actual product you receive.

This user guide is organized for the convenience of users to use and understand our products. We will do our best to ensure the accuracy of the contents of this guide, however, we still cannot guarantee the completeness of the contents thereof. As our products are subject to continuous upgrading, we reserve the right to modify this guide from time to time without prior notice.

- WELCOME -

Thank you for purchasing the Infinity TM105 Thermal Monocular. The Thermal Monocular is a multifunctional device that can be used for both day and night target observation. X-Vision Optics' all new Thermal Monocular boasts a 400 x 300 thermal detector and a 1.7 to 6.8x digital magnification, allowing it to detect big game out to nearly 2,000 yards away. Weighing in at 1lb and an overall length of 7.5", the TM105 is compact and lightweight. Features of the TM105 include WiFi capabilities, picture and record function, internal memory storage, hot spot tracking, and free phone app compatibility. This device is dust and water resistant to an international protection rating of IP66. X-Vision Optics' TM105 is the best all-around thermal monocular for hunting, scouting, and surveilling. Please read this manual thoroughly to take full advantage of all your device's features.

- FCC WARNING -

This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

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.

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

NOTE: 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.
- The rating information is located at the bottom of the unit.

- PRECAUTIONS -



DANGER

- 1) Please charge the battery with the method described in this Guide, following the charging procedure and precautions. Improper battery charging can cause heating, damage and even physical injury.
- 2) Do not open or disassemble the battery. If the battery leaks, do not touch the leaked fluid. If the leaked fluid gets in your eyes, rinse them immediately with clean water for at least 15 minutes and seek medical attention.



WARNING

- Try to keep equipment stable and avoid violent shaking when in use.
- Do not use or store the device in an environment that exceeds the allowable operating temperature or storage temperature.
- Do not directly aim the device at high-intensity thermal radiation sources, such as the sun, lasers, spot welding machines, etc..
- Do not plug the device ports.

- Do not disassemble the machine by yourself. This may cause equipment damage and loss of warranty rights.
- Do not use soluble or similar liquids on equipment and cables. This may cause damage to the equipment.
- Please do not use in environments that exceed the operating temperature of the device. This may cause damage to the equipment.
- Please observe the following measures when cleaning this device:
 - Non-optical surface: Use clean and soft cloth to wipe the non-optical surface of the thermographic camera;
 - Optical surface: When using the thermographic camera, please avoid polluting the optical surface of the lens. Avoid touching the lens with your hands, because the sweat on your hands will leave traces on the lens glass and may corrode the optical coating on the glass surface. When the surface of the optical lens is polluted, use a microfiber cloth to clean.

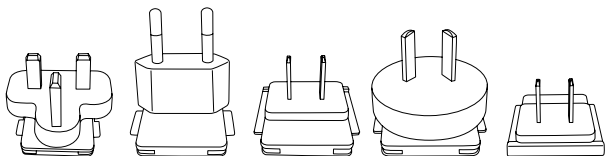
- Do not store the battery at a high temperature or near a high-temperature object.
- Do not short circuit the positive and negative poles of the battery.
- Do not expose the battery to moisture or water;
- Use only the original chargers and adapters that came with your device. Using other chargers or adapters can damage your device, or cause a fire.



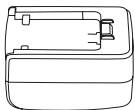
NOTES:

- 1) Do not expose the device to dust or moisture. Avoid water splashing on the equipment when being used in a wet environment. Cover the lens when not in use.
- 2) Please put the camera and all accessories in the case when not in use.

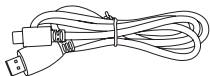
- PACKAGE CONTENTS -



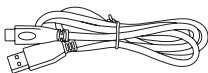
Plug



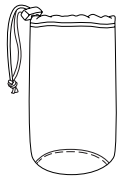
Power Adapter



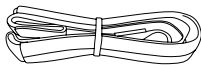
Micro HDMI Cable



Type C Cable



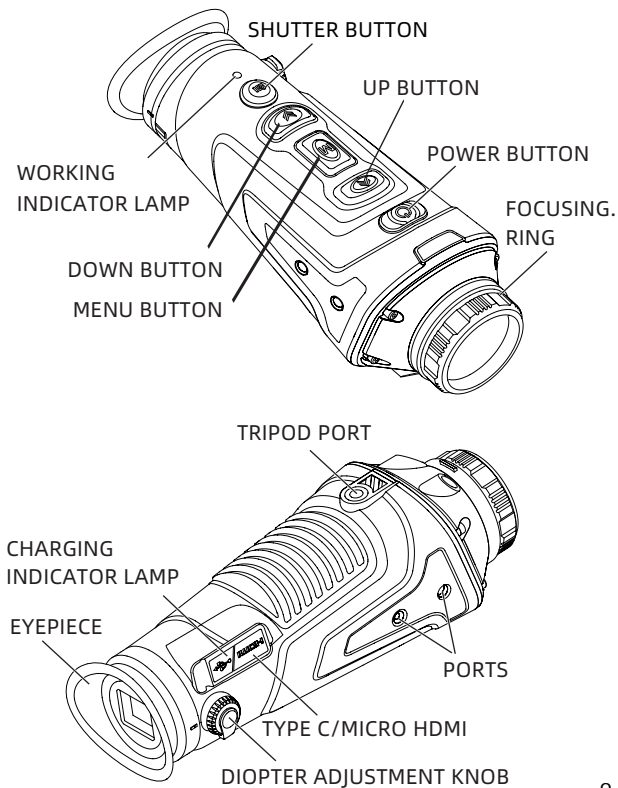
Inner Bag



Shoulder Strap

- ABOUT INFINITY SERIES -

This manual is applicable to multiple products of the Infinity series, but the illustration depicts only one model.



1. FOCUS RING

When the distance to the target changes, the image may become blurred. To refocus the image, turn the lens focus ring until the target is clear.

2. LENS COVER

Please cover the lens for protection when the product is not in use!

3. USB TYPE-C PORT

To connect the external power supply, plug the connector into the external port of the device. The output of the external power supply must be 5V2A.

4. MICRO HDMI

To connect the device to an external display, use the video cable that came with the product. Connect one end of the video cable to the external port on the device and the other end to the external display. The image of the device will be shown on the external display.



NOTE: When an HDMI cable is connected to an external screen, the real-time images will be displayed on the external screen only. The device screen will not be displayed. To restore the display on the device screen, disconnect the HDMI cable.

- BUTTON DESCRIPTION -

Button	Current device status	Short Press	Long Press	
Power button	Power off	/	Power on	
	Power on	Compensation	Display off	Power off
	Display off	Display on	/	
↑ button	Menu bar not shown	Switch scene mode	Zoom in	
	Menu bar shown	Scroll upward	/	
		Change parameter value		
Menu button	Menu bar not shown	Enter the shortcut menu	Enter the main menu	
	Menu bar shown	Enter the sub-menu	Exit the menu/ back to the previous menu	
		Select the options/ parameters		

Button	Current device status	Short Press	Long Press
↓ button	Menu bar not shown	Switch the pseudo color mode	Zoom out
	Menu bar shown	Scroll down	/
		Change parameter value	
Shutter button	Photo mode	Take photos	/
	Video mode	/	Start/ finish video recording

BUTTON DESCRIPTION

1. POWER BUTTON

POWER ON

Long-press the power button until the startup picture appears in the display, indicating the device has been turned on successfully.

POWER OFF

Manual power-off: long-press the power button and the power-off progress bar will be displayed. Continue holding, and the device will shut down once the progress bar is complete.

Automatic power-off: This feature will power-off the device after a set amount of time if the device is left idle. Automatic power-off can be disabled or enabled in settings.

DISPLAY OFF

Long-press the power button, and the progress bar of power-off will be displayed. Before the progress bar is finished, release the power button and Display off mode will be entered.

DISPLAY ON

In Display off mode, press any button to wake up the screen.

COMPENSATION:

When the device is turned on and the menu is not open, short-press the power button to complete the corresponding compensation.

2. SHUTTER BUTTON

Photo: When the menu is not called up, short-press the Shutter button to take a photo. The photo will display for 300ms before returning to real-time view.

Video: When the menu is not called up, long-press the Shutter button to start recording, and long-press again to stop the recording. Short-press the shutter button while recording to take a photo without stopping the video.

3. UP BUTTON

Switch scene mode:

Press the Up button to switch between Natural, Highlighted, or Enhanced scene mode.

Zoom in

Press and hold the Up button to zoom in on the real-time image.

4. DOWN BUTTON

Switch the pseudo color

Press the Down button to switch between White Hot, Black Hot, Adjustable Red Hot, Green Hot, Blue Hot and Iron Oxide Red.

Zoom out

Press and hold the Down button to zoom-out from the real-time image.

5. MENU BUTTON

Shortcut menu: When the menu is not called up, short-press the Menu button to bring up the shortcut menu.

Main menu: When the menu is not called up, long-press the Menu button to bring up the main menu.

OK and back/exit: When the menu is called up, press the Menu button to confirm the current selection. Press and hold the Menu button to return or exit the menu without saving the current selection.

FUNCTION DESCRIPTION

1. Shortcut menu

Picture in Picture (PIP): There are top left, top middle, and top right positions to choose from, enabling a secondary 2x magnification view.

Screen brightness: The display brightness can be adjusted from level 1 to 10.

Stadiametric ranging: To estimate the distance to a target, keep the lower horizontal line in place and long-press the up or down button to move the upper horizontal line until the spacing between the two lines is equal to the height of the target in the display.

The distance to the target can then be estimated by referring to the approximate ranging values of the three animals (rabbit, boar, and deer) in the upper left corner. The reference heights of the three animals are 0.35 meters, 0.9 meters, and 1.5 meters, respectively.

Hotspot tracking: A cursor will be displayed when it is enabled to track the spot with the highest temperature on the entire map.

Super power saving: the device switches to the low power consumption mode after power-on, the screen brightness is fixed at 20%, which can not be adjusted, and WiFi cannot be turned on. If the current WiFi has been already turned on, it will be turned off.

2. Main menu

Press and hold the Menu button to enter the option menu interface, and press the Up /Down button to switch between the image quality adjustment, the compensation mode, WiFi, power saving settings, indication settings, local settings and other settings.

a) **Image quality adjustment**

Image enhancement: When Image Enhancement is

enabled, target highlighting can be improved.

Scene mode: The brightness and contrast of the display can be adjusted in each scene mode to achieve a suitable image effect.

Pseudo Color:

White Hot: Objects that are relatively hot are displayed in white or light gray.

Black Hot: Objects that are relatively hot are displayed in black or dark gray.

Red Hot: Objects that are relatively hot are displayed in red.


Green Hot: Objects that are relatively hot are displayed in white, and objects that are relatively cold are displayed in green

Blue Hot: Objects that are relatively hot are displayed in orange, and objects that are relatively cold are displayed in blue

Iron Oxide Red: Objects that are relatively hot are displayed in red.

Brightness: Adjustable from level 1 to 10.

Contrast: Adjustable from level 1 to 10.

 **NOTE: The value after brightness/contrast adjustment will be saved in the current scene mode.**

Compensation mode

Automatic compensation: The device automatically corrects the image quality without any operation.

Scene compensation: The user manually corrects the image quality as needed, and the lens cover needs to be put on before compensation.

Shutter compensation: The user manually corrects the image quality as needed, and the shutter is compensated upon closing.

b) WiFi

Connect the device to a mobile phone client via WiFi to transmit recorded media and the real-time display to a mobile device. You can also control the device through the app, allowing the user to remotely operate from a distance.

- Download the "TargetIR" app.



(Available on iOS and Android).

- Connect the phone to the device WiFi network and enter the password "12345678".
- Open the app to view and operate the device remotely.

c) **Power saving settings**

Auto sleep: If there is no button operation within the set time, it will enter the sleep mode. If the working indicator lamp is turned on before the device enters the sleep mode, it will flash in the sleep mode.

Auto power-off: If there is no button operation within the set time, it will power off.

NOTE: When the WiFi is connected, automatic sleep and automatic power-off cannot be performed.

d) **Indication settings**

Charging indication: Enable/disable the charging indicator light, showing the device charging state.

e) **Working indication:** Enable/disable the working indicator light, showing the device work state.

f) **Local settings**

Time format: Users can select the time format of 12H/24H based on their preference.

Date format: Users can select the date format based on their preference. Options include MM-DD-YYYY, DD-MM-YYYY, or YYYY-MM-DD.

Time adjustment: Users can set the current date and time of the device in settings.

Watermark settings: Users can select the options for the date and time watermark displayed on the image based on their preference.

Language settings: Users can set the language to Chinese, English, Russian, French, or German.

Memory formatting: The memory card is formatted to clear the memory and create space.

Restoration of default values: the device restores completely to the factory default settings.

3. Charging

When using the device for the first time, be sure to charge for at least 4 hours with the accompanying USB charger. To charge, please remove the USB cover on the side of the camera, insert the Type C USB cable, and connect to the power supply. Charging voltage and current: 5V, 2A. During normal charging, the charging indicator light is red. When the charging is completed, the charging indicator light turns green.

4. Power display

The power indicator is displayed in the upper right corner of the screen, showing the remaining power level of the device.

After power-on, the screen enters the real-time picture. The icon corresponding to the power level below will be displayed on the screen.



High



Medium to high



Medium



Medium to low



Low



Extremely low

⚠ NOTE: When the power is low, please charge the battery immediately!

- TROUBLESHOOTING -

1. **Device fails to start.**

Solution: Replace the battery or connect the adapter for charging.

2. **The device cannot take photos/record.**

Solution: the internal storage space of the device is likely full. Format the memory card.

 **NOTE: This operation can lead to lost media data.**

3. **The device display time does not match the actual time display.**

Solution: Reset the time and date of the device in the settings.

4. **Screen goes out during use.**

Solution: Short-press any button to wake the device up from hibernation and light up the screen.

5. **The image of the device is blurred during use.**

Solution: Adjust the device to focus manually until the display is clear.

- STORAGE AND TRANSPORT -

To prevent damage, danger, property loss, etc., please read the manual carefully before using the device. Follow the instructions in this manual closely, and keep for future reference

Storage:

1. The packaged product must be stored in a well-ventilated, clean, condensate-free and corrosive gas-free room with temperature of -22F ~ 140F and relative humidity not exceeding 95%.
2. Please charge the device once every 3 months to prevent deterioration.

Transport:

During transport, the device should be protected against water, falling, and any severe vibration or impact. Handle with care

	TM105
Magnification	2.3 to 9.2x
Thermal Sensor	400 x 300
Pixel Size	17 μ m
Frame Rate	50 Hz
Objective Lens	35mm
Field of View	85ft @ 100yd
Detection Range	1,100yd
Recognition Range	475yd
Hotspot Tracking	YES
Stadiametric Rangefinding	YES
Picture in Picture	YES
NETD	\leq 30 mk
Temperature Variation Detection	0.05° F
Display Resolution	1280 x 960 LCOS
Reticle	N/A
Color Palettes	5
Power Supply	Built-in Lithium-Ion Batteries
Battery Life	5 Hours
IP Rating	IP66
Dimensions	7.5" x 2.5" x 2.8"
Weight	1 Pound
Internal Memory	16GB
Mount	Tripod Mount
Wi-Fi Capability	YES
Photo and Video	YES
Applications	YES
Accessories	USB-C Charging Cable, Protective Case, Lanyard, HDMI Cable, Rubber Lens Cap



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