THERMAL
XVT THERMAL MONOCULAR
TM1
OWNER'S MANUAL

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X-Vision Optics THERMAL MONOCULAR
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Thank you for purchasing the XVT 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 (TM1) boasts a 400 x 300 thermal detector and a 1.7 to 6.8x digital magnification, allowing it to detect big game out to almost 2000 yards away. Weighing in at 1lb and an overall length of 7.5," the TM1 is compact and lightweight. Features of the TM1 include Wi-Fi 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' TM1 is the best all-around thermal monocular for hunting, scouting, and surveilling. Please read this manual thoroughly to take full advantage of all the TM1 features.

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(1) Package Contents

- o Thermal Reflex Sight
- o CR123 Battery
- o USB-C Cable

(2) About the Thermal Monocular

Photo/video button
Down button
Menu button
Up button
Power button
Working indicator
Lens focusing ring
Tripod interface
Charging indicator
Eyepiece
External access interface
Type C/Micro HDMI
Diopter knob

(3) Operating Procedures

Buttons	Device current status	Short press	Long press
Power button	Power-off		Power on
	Power on	Calibration	Display off
	Display off	Display on	
⌃ Up button	No display in the menu bar	Switch to scene mode	Zoom in
	Display in the menu bar	Switch between menu options	
		Change parameter value	
Menu button	No display in the menu bar	Enter the shortcut menu	Enter the main menu
	Display in the menu bar	Enter the sub-menu	Exit the menu bar / backto the previous menu
		Select option/ parameter value	
⌄ Down button	No display in the menu bar	Switch to color palettes mode	Zoom out
	Menu bar display	Downward switching options	
		Change parameter value	
Photo / video	Photo mode	Photo	
	Video mode		Start video recording
			Stop video recording

(4) Menu and Operating Functions
Menu 1

- o Short press the 'M' button to enter menu 1.
- o Press the up/down button to switch between PIP (picture-in-picture), Screen BRI (Screen Brightness), Stadia-metric Rangefinder, Hot Track, and Super Energy-Saving
- o Long-Press to exit menu
- o Short-Press to select menu options

PIP: Select the location of the Picture-in-Picture to left, middle or right. The PIP window will display the main image at a 2x magnification

Screen BRI: (Screen Brightness) 10 brightness levels of 10%-100% can be adjusted.

Stadia-Metric Rangefinder: Estimate the distance of the target by a known target distance. Three examples of targets are available on the device as reference: Rabbit (35cm), Boar (90cm), Deer (150cm), and real-time display of distance information of the three animals.

Using the Rangefinder: Align the lower horizontal line the bottom of the target image, press the up/down button to charge the width between the upper and lower horizontal lines until the upper horizontal line is aligned with the top of the target image. Now, the distance can be calculated and displayed automatically. By comparing the target size

with the three reference animal sizes, the user can roughly calculate the distance of the target.

Hot Track: When on, the cross cursor tracks the point with the highest temperature in the screen.

Super Energy-Saving: When on, the Screen BRI is reduced to 30%, and the WIFI is turned off. When off, the super energy-saving mode is turned off, the Screen BRI and WIFI are returned to their original state.

NOTE: If WIFI cannot be turned on, please check if the super energy-saving mode is off.

Menu 2
o   Long press the 'M' button to enter menu
o   Press the Up/Down button to switch between image quality adjustment, calibration model, WIFI, power Saving settings, indication settings, general settings and other settings.

Image Quality Adjustment
o   **Image Enhancement:** When the image enhancement is turned on, the effect of the target can be enhanced.

o   **Scene Mode:** Image brightness and contrast can be adjusted foreach scene mode to achieve the appropriate screen effect.

o   **Color Palettes:** white hot, black hot, red hot,

iron, and blue hot

- o **White hot:** the object with higher temperature shows in white orlight gray.
- o **Black hot:** the object with higher temperature shows in black ordark gray.
- o **Red hot**: the object with higher temperature shows in red.
- o **Iron**: the object with higher temperature shows in iron red.
- o **Blue hot:** the object with lower temperature shows in blue or darkblue, and the object with higher temperature shows in red.

Screen Brightness: 1-10 levels can be adjusted.

Contrast: 1-10 levels can be adjusted

Calibration

- o **Automatic:** The device automatically corrects the image qualitywithout any action.

- o **Scene:** The user manually corrects the image quality as needed,and the lens cover needs to be attached before calibration.

- o **Shutter:** The user manually corrects the image quality as needed,and the device shutter closes for calibration.

- o **WIFI:** The device can be connected to a mobile

phone via WIFI. The Thermal Monocular can be operated remotely via the mobile phone app.

o When the WIFI is turned on, but not connected, the WIFI icon flashes and the WIFI name is displayed at the top of the screen.

o When the WIFI is connected, the WIFI icon is always on.

o **Mobile Phone APP:** Search and download 'TrackIR' APP in the mobile phone app market, open the app, and find the WIFI name of 'Handheld-TI-XXXX' in the mobile phone WIFI settings, enter the password '12345678', then after the connection is successful, the user can operate remotely.

  o **Android:** Please search and download in the 360-app market, Google Play
  o **IOS:** Please search and download in the App store.

Power Saving Settings

o **Auto Stand-by:** If there is no operation in the setting time, the device enters stand-by mode. If the work indicator is on before entering Stand-by mode, the work indicator will flash in Stand-by mode.

o **Auto Power Off:** IF there is not operation in the setting time, power-off.

- o **Note:** Auto Stand-by and Auto Power Off cannot be performed while WIFI is connected.

Indication Settings

- o **Charing Indication:** In the charging state, control the opening or closing of the charging indicator.

- o **Working Indication:** In the normal working state, control the opening or closing of the work indicator.

General Settings:

- o **Time style:** Users can choose between 12/24 hour format
- o **Date style:** Users can choose between different date formats
- o **Time setup:** Users can adjust the current date and time of thedevice.
- o **Watermark settings:** Users can choose the display date and time watermark on the screen
- o **Language settings:** English, Russian, German, French, and Chinese
- o **Memory card formatting**: Memory card formatting and erasing thememory.

(5) Battery and Charging
- o When charging the thermal monocular for the first time, charge it for at least four hours with a matching USB charger.
- o Charging Specification: 5V, 2A.
- o Charging Indicator is red during normal charging.
- o Charging indicator is green when charging is

complete.

o **Note:** Charging when power on.

(6) Video Output

o There is a video output port beside the USB interface on the side of the thermal monocular. The external video is always in a state of power on.

o The image of the thermal monocular on the display can be output to the external screen through the matching HDMI video cable

o Note: When HDMI is used to connect the external display screen, the real-time screen can only be viewed by the external display. There is no screen display on the screen of the device. When the HDMI cable is unplugged, the screen of the device is restored.

(7) Safety Warnings

o Thermal Monocular shall not be pointed at high-strength energy sources (including the Sun,

laser transmitting equipment and their reflection sources), as this can have a negative influence on its accuracy and can permanently damage the infrared detector.

- o If the thermal monocular will be not used for a long time,charge the thermal monocular at least 4 hours every two months during storage, and store the thermal imager in a dry and well-ventilated environment.

- o Do not charge the battery in an environment over 104°F.

(8) Specifications
- Magnification: 1.7-6.8X
- Detector: 400 x 300
- Pixel Size: 17μm
- Focal Length: 25mm F1.2
- Frame Rate: 50Hz
- Objective Lens: 25mm
- Field of View: 15.4º x 11.6º
- Detection Range: Person- 700m (750 yds) / Vehicle- 1700m (1900 yds)
- Recognition Range: Person- 350m (380 yds) / Vehicle- 700m (750 yds)
- NETD: ≦50mk
- Display Screen: 1280 x 960 Color LCOS
- Display Palette: White hot, Black hot, Red Hot, Iron Hot, Blue Hot
- Power Supply: 5VDC Internal Battery
- Max. Battery Life: >5 hours (@77º)
- Dimensions: 2.75" x 2.5" x 7.5" in.
- IP Rating: IP66
- Ranging Capability: Stadia-metric Rangefinding
- Hot Track: Yes
- USB Capability: Type C, for charging/file transfer
- Video Interface: Micro HDMI
- Weight: 1.05 lb.
- Memory: 16 GB
- Picture and Video Capabilities: Yes

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