

# ThermTec

## Cyclops SE Series

Thermal Imaging Monocular

# CYCLOPS SE SERIES

## User Manual

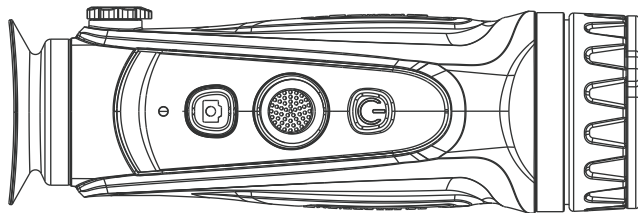
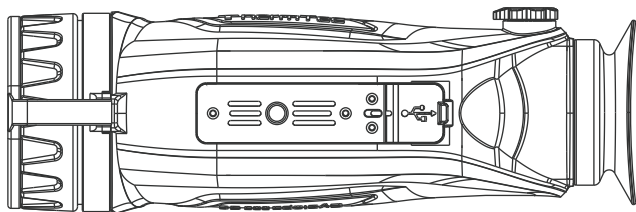


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# About This Manual

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This Manual is applicable to Thermal Imaging Monocular.

The Manual includes instructions for using and managing the product. Pictures, charts, images, and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons.



# Regulatory Information

These clauses apply only to the products bearing the corresponding mark or information.



This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the Directive 2014/53/EU(RED), Directive 2014/30/EU(EMC), Directive 2014/35/EU(LVD), Directive 2011/65/EU(RoHS).



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Directive 2006/66/EC and its amendment 2013/56/EU (Battery Directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: [www.recyclethis.info](http://www.recyclethis.info).

# **1** Introduction

## **1.1 Device Description**

ThermTec Cyclops-SE Series Thermal Imaging Monocular, a next-generation intelligent thermal imaging device, features a 12μm uncooled infrared detector, a 35mm objective lens, and a 1024x768 OLED high-definition display. With its AI image recognition algorithm, it delivers clear views in various lighting conditions, including complete darkness, ensuring reliable, high-quality visuals for nighttime activities. Additionally, its seamless mobile phone connectivity enables real-time view sharing.

## **1.2 Features**

### **1. Mechanical Joystick Design**

It balances the central of gravity, providing an easier and outstanding handheld experience.

### **2. 12μm VOx Detector**

The 12μm VOx detector provides images with better quality, and ensures perfect detail recognition.

### **3. OLED Display**

Designed with 1024x768 OLED display, it brings outstanding HD image quality as well as great durability, making it operable in a broader temperature range as low as minus 20°C.

### **4. AI Intelligent Ranging**

Based on the deep learning algorithm, the monocular can automatically measure the object distance in the various objects.

## **6. Photo and Video Playback**

Integrated pictures and video recording makes sharing the thermal action quick and easy, with the functions of playback and APP sharing.

## **7. Long Battery Life**

Built-in battery with up to 16H super long standby, recording every and instant moment of your hunting and outdoor experience.

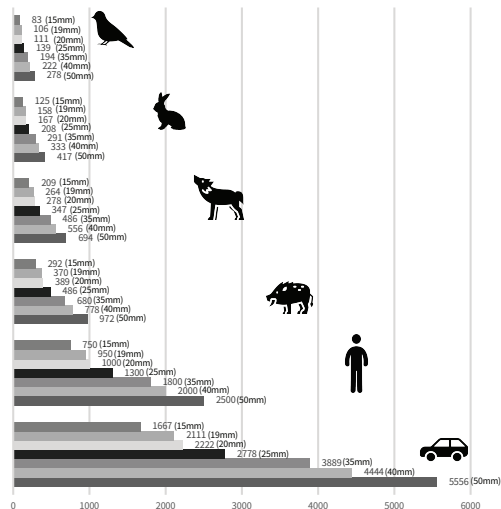
## **8. Continuous Zooming**

Continuous 1.0-4.0 HD zooming ensures excellent sharpness and the highest resolution of details from minimum to maximum magnification.

## **9. IP67 Protection Design**

## 1.3 Detection Range

The illustration below shows the comparative range performance of the monocular with different lens configurations. The data is based on detecting a car of 4m, a man of 1.8m tall, a wild boar of 0.7m tall, a wolf of 0.5m tall, a rabbit of 0.3m tall and a bird of 0.2m tall.



## 1.4 Application Scenarios

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

## 1.5 Cautions



### CAUTION



Avoid hard objects.



Do not aim the lens directly at the sun or high-temperature light sources.



Do not use the device in extremely cold or hot environment.



Charge the battery once every three months when it is not used for a long period of time.



Make sure the USB cover is tightly closed when used in water environment.



Do not irradiate the laser indicator of the device to human eyes.



Do not disassemble or modify the device by yourself in any way.

## 2 Packing List



Monocular (x1)



User manual (x1)



Lanyard(x2)



USB cable (x1)



Lens cloth (x1)

## 3 Operation Guide

### 3.1 Battery Charging

The battery should be fully charged prior to use.

Note: The battery is not user replaceable.


Follow the below steps to charge the battery:

1. Lift the cover from the USB port.
2. Plug the cable provided into the USB port.
3. Plug the opposite end of the cable into a USB power source.



Notes: When the charging indicator on the device becomes red, it means you need to charge the device immediately. The indicator turns to red when it is charging and turns to green when it finishes charging. After it turns to green, stop charging.

## 3.2 Power on/off

	Power on	Power off
	Hold the POWER button for four seconds and the boost screen will be shown.	When the device is turned on, hold the POWER button for four seconds to power off the device.

Note: Refer to Figure 1 for the main view of the monocular.

## 3.3 Buttons and Controls



### 3.3.1 Button Features and Introduction




Figure 1




## Before entering the main menu

	Long press	Short press	Double-Click
	Power on/off	Standby mode on/off	N/A
	Take videos	Take photos	N/A

	Up	Down	Left	Right		Center	
				Short push	Long push	Brief press	Double press
	Zoom in	Zoom out	AI Ranging	Peseudo switch	Outline mode	Calibration	Main menu

## After entering the main menu

	Up	Down	Short Press	Long Press	Double press
	Move up	Move down	Confirmation	Exit	N/A

### 3.3.2. Lens Adjustment

#### Diopter Adjustment

Looking through the eyepiece, adjust the position of diopter level to optimize the image sharpness on the OLED display.



#### Objective Lens Focusing

Manually adjust the objective lens focus when necessary.



### 3.3.3 Joystick Operation

#### 3.3.3.1 Zoom

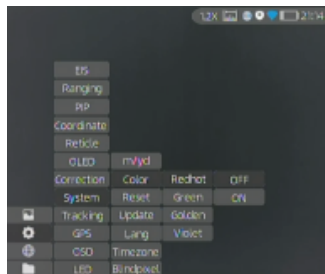


### 3.3.3.2 Pseudo Color Switch

Use joystick towards right to switch pseudo color.



There are six color palettes by default. You can choose the pseudo color you want by customizing. Unwanted colors can be turned off in the system setting.



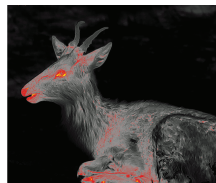
### Color Palettes



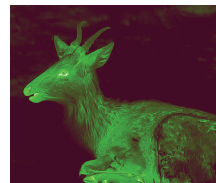
White



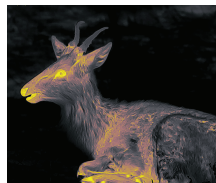
Black



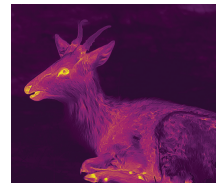
Red



Green



Golden



Violet

### 3.3.3.3 Target Outline Function

Long press the joystick towards right to activate the Target Outline Mode. You can clearly observe the outline of your targets in darkness, and it will help to reduce the strong light contrast to your eyes.

Long press the joystick towards right for one more time to exit the Outline Mode.




### 3.3.3.4 AI Ranging

Use the joystick towards left to enable or disable AI ranging function (before this function is enabled, please make sure the device is in AI ranging mode. Otherwise, refer to Section 3.4 for setting).



AI Ranging Function

### 3.3.3.4.1 Turning on AI Ranging Function

Double click the joystick to enter the main menu, and check whether the AI ranging function is enabled (this function is enabled by default). If not, press  to enter the System Setting menu, and press Ranging and AI to turn on this function.

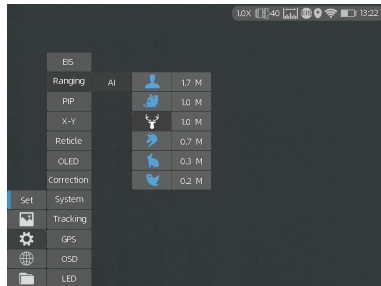
Short press the joystick to left to turn on AI Ranging function, and the corresponding icon will turn to blue at the upper right corner.

Notes: There are six types of objects to be selected for AI measurement in total. If the AI ranging function is not enabled by user before using this device, this function will not be working properly.  
the upper right corner.

### 3.3.3.4.2 Unselecting the Type of Objects

Move the cursor and short press the joystick one time to unselect the type of object that is not your target object in the submenu.

The icon of the unselected type of object will turn to white, as shown in the below figure. The distance of unselected type of object will not be shown on your device.



Press the joystick to the left to exit the current menu.

### 3.3.3.4.3 Accurate Distance Measurement


Move the cursor to select the type of object that is your target object in the submenu.


Short press the joystick one time to save your selection. The height of the selected type of object can also be set by the user.

Press the joystick to the left to exit the current menu.

Notes: The actual height of the types of objects should be consistent with the set parameters for accurate distance measurement.

### 3.3.4 Capture/Record

Press  to take photos. Then the photo icon in the upper left corner will flash once.


Press and hold  to take videos. Then the recording icon in the upper left corner starts flashing, and the recording starts timing. Press and hold again to stop

## 3.4 Settings

Double-click the joystick to enter Setting menu.

Note: Select by moving the joystick, and short press the joystick to confirm the selection.

### 3.4.1 Image Setting

Press  to enter the Imaging Setting menu. There are five sub-menus for image setting, which are “Image Mode”, “Sharpness”, “Denoise”, “Brightness” and “Contrast”.

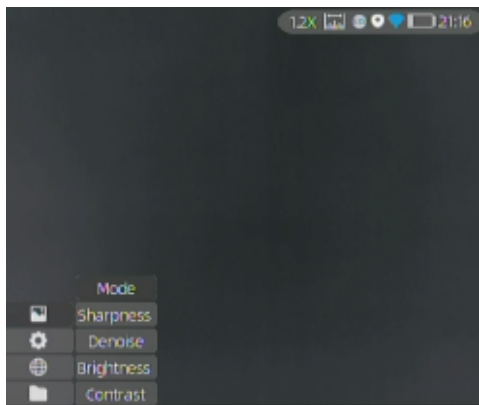

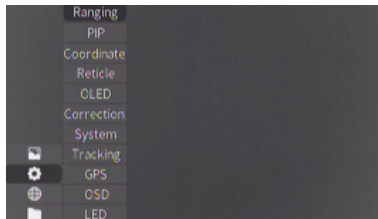


Image Setting		
Mode	Object mode	Especially enhance target's detail. It's recommended to be used in bad weather conditions.
	Forest mode	Obtaining both background and target's detail simultaneously.
Sharpness	0-10	Adjust image sharpness to make the image edge sharper. The recommended value is 5.
Denoise	0-10	Adjust image noise to make the image cleaner. The recommended value is 5.
Brightness	1-10	Adjust image brightness to make the image brighter. The recommended value is 5.
Contrast	1-10	Adjust image contrast to make the target more prominent in the image. The recommended value is 5.

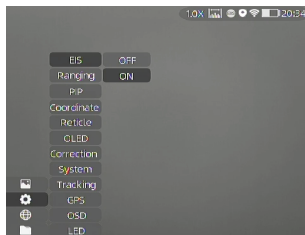
### 3.4.2 System Setting

Press  to enter the System Setting menu. Select by moving the joystick, and short-press the joystick to confirm the selection.




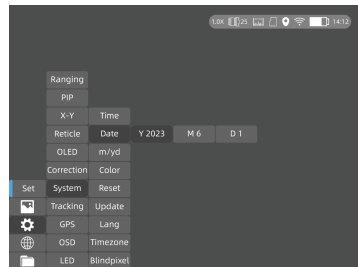
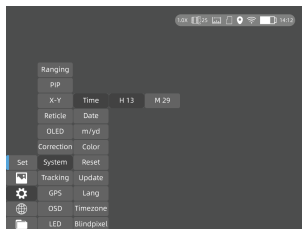
System Setting		
EIS		Electronic Image Stabilization. Can be turned on/off in the system setting.
Ranging	AI	AI distance measurement
	MIL	MIL distance measurement
PIP	Picture-in-picture	In the picture, the image is 2x enlarged from the center of the cross.
X-Y		The position of the crosshair in the picture can be adjusted and separately saved.
Reticle	0-8	Choose the style of the crosshair. "0" represents none, and "1-8" represents seven different styles.
OLED	Hue	Blue, purple and gray are optional for OLED hue.
Correction	Manual/ Auto	The mask works to calibrate the uniformity of images.
System	Shutdown	Setting off time
	Logo	Logo watermark at picture or video
	Reset	All configuration parameters are restored to the factory default values after resetting.
	Update	You can adjust and upgrade the device system.
	Language	Support multiple languages.
	Time zone	Select local time zone and adjust the date and time.
Tracking	Blind pixel	The blind pixel in the picture can be replaced.
		Turn on heat tracking to mark the target with the highest temperature in real time in the screen.
OSD		Turn off OSD.
LED		Turn off LED. The work indicator is turned off and the hidden work mode is started.

EIS function: Turn on the EIS function to reduce the impact of body shaking on the image and keep the image stable when observing distant targets.



### 3.4.3 Date & Time Setting

Double press the joystick and press  to enter the System submenu, and press Time and Date to set the time (hour and minute) and date (year, month and day) respectively, as shown in the below figures.



Notes: The date will be displayed on the screen only when entering the Stand-by Mode.

### 3.4.4 Network Connection

Press  to enter the Network Connection menu.





### 3.4.4.1 APP Download

Search "ThermTec Outdoor" in APP store, or scan the below QR code to download the APP.

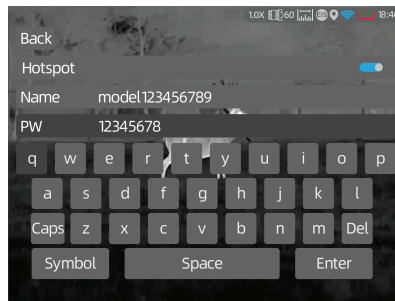


### 3.4.4.2 Connect via Hotspot

- Turn on device's hotspot.




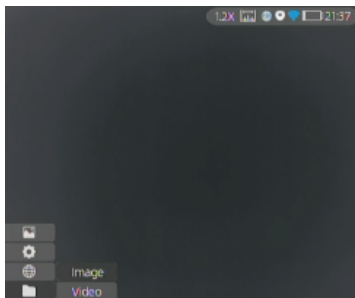
- Connect mobile client with device's hotspot.



- After the connection, you could control devices freely with APP (ThermTec Outdoor).

### 3.4.5 File Management

Short-press  to enter the File Management menu. Select the image and video sub-menus to view the images and videos and play the videos.



File Setting	
Image	Access the Image sub-menu, and select photo files through the joystick for management.
Video	Access the Video sub-menu, and select video files through the joystick for management.

### 3.5 External Video & Data Reading

Power on the device, use a type-C to USB cable to connect with the computer to read the video and image data in the memory.

Note: video and image taken in analog format will be saved in folder named “720”, video and image directly taken by monocular will be saved in folder named “1024”.

## 3.6 System Software Upgrade

Cyclops-SE series thermal imaging monocular supports “ThermTec Outdoor” APP, which allows you to transmit the image from the thermal imager to the smartphone or tablet via Hotspot in real time mode.

### 3.6.1 Upgrading via APP

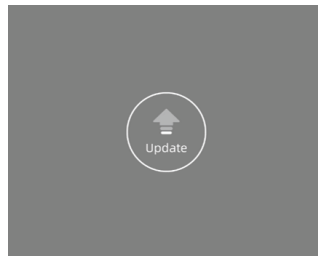
- Open ThermTec Outdoor APP.
- Turn on the hotspot of the device, and connect it with the Mobile phone.
- Select Update on the menu options.
- The downloading and upgradation would be a continuous process if there is an update.
- After finishing the update, the device will reboot.

### 3.6.2 Upgrading via PC

- Please download the corresponding upgrade package from the official website, [www.thermeyerotec.com](http://www.thermeyerotec.com). Connect the device to your PC via a Type-C data cable.



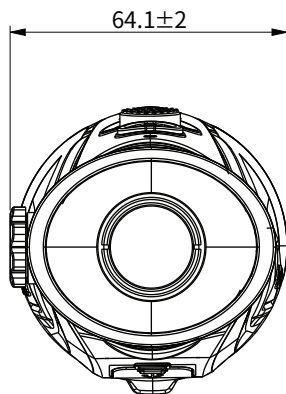
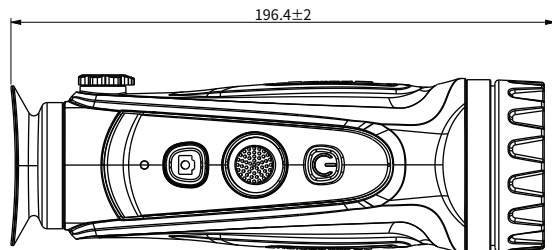
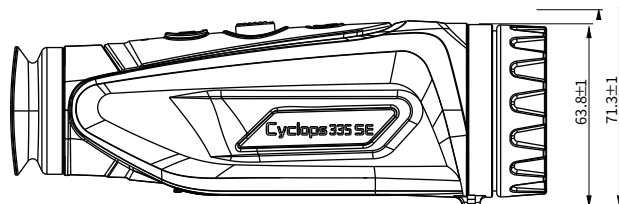
- Copy the related updating firmware to the storage file of Cyclops-SE. Press joystick to select Update icon, and the system will prompt “Update”.



- Enter version to check firmware version.

## 4 Technical Data

### 4.1 Dimensions



## 4.2 Dimensions

Model	Cyclops335 SE
	<b>Microbolometer</b>
Resolution	384x288
Pixel Pitch	12μm
NETD	20mK@300k
Spectral range	8-14μm
Frame rate	50HZ
Detection Range	1800m
	<b>Optics</b>
Objective lens	35mm/F1.0
Field of view	7.5° x 5.6°
/ m @100m	13.2m x 9.9m
Magnification	3.3x
Digital Zoom	1-4x continuous zoom
Eye relief	40mm
Exit pupil	6mm
Diopter	±5D
	<b>Display</b>
Type	AMOLED
Resolution	1024x768
Display size	0.39 inch
Color palette	6
Image mode	Forest/Target/Outline

	Function
Photo/video playback	Yes
Language	Multiple-languages
Inbuilt Memory	64GB
Calibration	Auto/Manual
PIP	Yes
AI/MIL Distance Measurement	Yes
Heat Track	Yes
Real-time Notification	Yes
OSD Recording	Yes
	<b>Battery</b>
Internal battery	Internal High Capacity Li-ion Battery (18650x2)
Battery life	16h
	<b>Interface</b>
Type-C	Supports battery charging, data transfer
Hotspot	App remote control
	<b>Environment</b>
Working temperature	-20°C—+50°C
Protection Level	IP67
Weight, g	522
Dimension mm	196.4*63.8*64.1
	<b>Accessories</b>
External Cable	USB Cable
Other Accessories	Non-dust cloth and etc.



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