



Cyclops 3.0

Thermal Imaging Monocular Cyclops 3.0 Series User Manual



V1.0

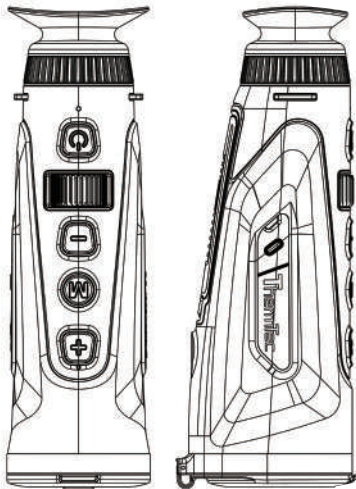


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Legal Information

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About this Manual

The Manual includes instructions for using and managing the product, pictures, charts, images and all other information hereinafter are for explanation and description only. The information contained in the Manual is subject to change, without notice due to firmware updates or other reasons. Please find the latest version of this Manual at the ThermTec website (<https://www.thermeyerotec.com>).

Please use this Manual with the guidance and assistance of professionals trained in supporting the product.

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REGULATORY 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).

The full text of the EU declaration of conformity is available at the following internet address:
<https://www.thermeyer-tec.com/declaration-of-conformity/>



Frequency Bands and Power (for CE)

The frequency bands and transmitting power (radiated and/or conducted) nominal limits applicable to the following radio equipment are as follows:

Wi-Fi 2.4 GHz (2.4 GHz to 2.4835 GHz), 17 dBm

For the device without a supplied power adapter, use the power adapter provided by a qualified manufacturer. Refer to the product specification for detailed power requirements. For the device without a supplied battery, use the battery provided by a qualified manufacturer. Refer to the product specification for detailed battery requirements.



This product contains a battery and it is in conformity with the Regulation (EU) 2023/1542. The battery 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), or lead (Pb). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info.



This product and - if applicable - the supplied accessories too are marked with "UKCA" and comply therefore with the following directives: Radio Equipment Regulations 2017, Electromagnetic Compatibility Regulations 2016, Electrical Equipment (Safety) Regulations 2016, the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012.

The RoHS logo, which consists of the text 'RoHS' inside a rectangular border.

RoHS

This product and - if applicable - the supplied accessories too are marked with "RoHS" and comply therefore the requirements of Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("RoHS recast" or "RoHS 2").



2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.



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.

SAFETY INTRODUCTION

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss. Please read all the safety information carefully before using.

Transportation

- Keep the device in original or similar packaging while transporting it.
- Keep all wrappers after unpacking them for future use. In case of any failure occurred, you need to return the device to the factory with the original wrapper. Transportation without the original wrapper may result in damage on the device and the company shall not take any responsibilities.
- Do not drop the product or subject it to physical shock. Keep the device away from magnetic interference.

Power Supply

- If a power adapter is provided in the device package, use the provided adapter only. If no power adapter is provided, ensure the power adapter or other power supply complies with Limited Power Source. Refer to the product label for the power supply output parameters.
- Make sure the plug is properly connected to the power socket.
- DO NOT connect multiple devices to one power adapter, to avoid over heating or fire hazards caused by overload.
- The power delivered by the charger must be between min. 10 Watts required by the radio equipment, and max. 10.4 Watts in order to achieve the maximum charging speed.

Battery

- The device supports removable li-ion battery. The battery rated voltage and capacity is 3.6 V/3300 mAh.
- CAUTION: Risk of explosion if the battery is replaced by an incorrect type. Replace with the same or equivalent type only.

- Batteries of improper size cannot be installed, and may cause abnormal shutdown.
- Improper replacement of the battery with an incorrect type may defeat a safeguard (for example, in the case of some lithium battery types).
- Please purchase the batteries recommended by the manufacturer if necessary.
- The purchased batteries by users need to comply with the relevant international standards about battery safety (e.g. EN/IEC standards).
- Use the battery provided by qualified manufacturer. Refer to the product specification for detailed battery requirements.
- Dispose of used batteries according to the instructions.
- CAUTION: Risks of short circuit, fire, or explosion if the battery is damaged. Frequent use, dropping, impact, corrosion, or compression of the battery may cause damages including cracked casing, detached plates, or leakage of internal liquid or gas, etc.
- If the battery is damaged, stop using it immediately and dispose of it according to the instructions.
- Remove the battery if you do not use the device for a long time.
- For long-term storage of the battery, make sure it is fully charged every 2 months to ensure the battery quality. Otherwise, damage may occur.
- The built-in battery cannot be dismantled. Please contact the manufacture for repair if necessary.
- Make sure the battery temperature is between 0°C to 50°C (32°F to 122°F) when charging.
- Do not dispose of the battery into fire or a hot oven, or mechanically crush or cut the battery, which may result in an explosion.
- Do not leave the battery in an extremely high temperature or low air pressure environment, which may result in an explosion or the leakage of flammable liquid or gas.
- Confirm there is no flammable material within 2 m of the charger during charging.
- DO NOT place the device with battery or the battery alone near heating or fire source. Avoid direct sunlight.
- DO NOT place the battery in the reach of children.
- DO NOT swallow the battery to avoid chemical burns.

- This product contains a coin/button cell battery. If the coin/button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.
- If the battery compartment does not close securely, stop using the product and keep it away from children.
- If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.

Maintenance

- If the product does not work properly, please contact your dealer or the nearest service center. We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.
- Make sure that the power has been disconnected before device teardown and repair by professionals.
- Check the optical surfaces of objective lens, eyepiece, rangefinder, etc. If necessary, remove dust and sand from the optics using tools and solvent designed especially for this purpose (it is preferable to use a non-contact method).
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the device may be impaired.
- Wipe the exterior surfaces of metal, plastic, and silicone parts with a clean and soft cloth. Do not use chemically active substances, solvents, etc. as these may damage the paint.

Using Environment

- Make sure the running environment meets the requirement of the device. The operating temperature shall be -20 °C to 50 °C , and the operating humidity shall be from 5% to 95%.
- DO NOT expose the device to high electromagnetic radiation or dusty environments.
- DO NOT aim the lens at the sun or any other bright light.
- Place the device in a dry and well-ventilated environment.

- When any laser equipment is in use, make sure that the device lens is not exposed to the laser beam, or it may burn out.
- Avoid equipment installation on vibratory surface or places subject to shock (neglect may cause equipment damage).
- This equipment is not suitable for use in locations where children are likely to be present.

Emergency

- If smoke, odor, or noise arises from the device, immediately turn off the power, unplug the power cable, and contact the service center.

Laser



- When any laser equipment is in use, make sure that the device lens is not exposed to the laser beam, or it may burn out. The laser radiation emitted from the device can cause eye injuries, burning of skin or inflammable substances. Before enabling the laser ranging function, make sure no human or inflammable substances are in front of the laser lens. Do not place the device where minors can fetch it. According to IEC 60825-1:2014, EN 60825-1:2014+A11:2021, and EN 50689:2021, this laser product is classified as Class 1 laser product and consumer laser product.

1 Introduction

1.1 Device Description

ThermTec Cyclops 335L 3.0 is a new-generation thermal imaging monocular. It is equipped with a 12 μ m uncooled infrared detector, supports a 35mm objective lens with a large aperture objective lenses, and features a high-definition 1600 $\times$ 1200 AMOLED display. It also integrates a 1000m high-precision laser ranging module, which greatly improves target positioning and range assessment efficiency, enhances operational accuracy for outdoor, hunting and tactical scenarios, and works seamlessly with the thermal imaging system to offer users more comprehensive and reliable data support.



1.2 Features

Small Size

Ultra-compact and lightweight design for easy portability, perfect for on-the-go use without sacrificing performance.

12μm VOx Detector

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

AMOLED Display

Designed with 1600x1200 0.5 " AMOLED display, it brings outstanding image quality as well as great durability, making it operable in a broader temperature range as low as minus 20°C .

1000m Laser Rangefinder

With integrated laser module, the monocular can automatically measure up to 1000m.

NETD < 15mK

NETD<15mK delivers exceptional thermal sensitivity, detecting subtle temperature differences for clear, high-contrast imagery in all conditions.

Photo and Video Playback

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

One-handed Operation

Ergonomic, user-friendly design enables effortless one-handed control for quick, convenient operation in the field.

Thermal Super Resolution

Advanced super resolution technology enhances image sharpness, reduces noise, and preserves fine details even at maximum zoom.

Continuous Zooming

Continuous digital zooming up to 4X ensures excellent sharpness and the highest resolution of details from minimum to maximum magnification.

IP67 Protection Design

Provided with IP67-rated weatherproof performance, it is capable of capturing images and videos through rain, snow, smoke, smog, or dust.

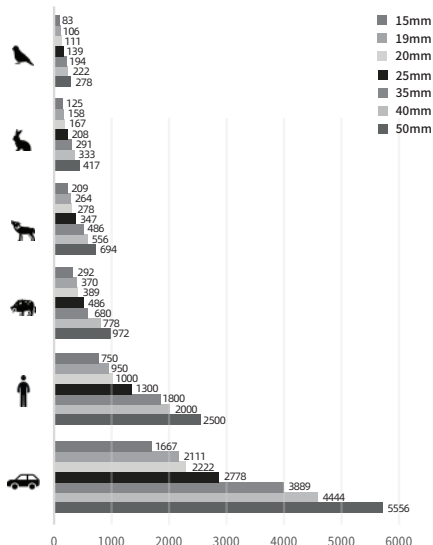
1.3 Specifications

Model		Cyclops335L 3.0
Microbolometer		
Resolution		384×288
Pixel pitch		12μm
NETD		<15mK
Spectral range		8-14μm
Frame rate		50Hz
Detection range		1800m
Optics		
Objective lens		35mm, F0.8
Field of view		7.5°×5.6°
m@100m		13.2m×9.9m
Magnification		4.3X
Digital zoom		1-4X continuous zoom
Eye relief		20mm
Exit pupil		8mm
Diopter		±5D
Display		
Type		AMOLED
Resolution		1600×1200
Display size		0.5 inch
Color palette		6
Image mode		Forest/Target

Function	
Photo / Video playback	Yes
Language	Multiple-language
Inbuilt memory	64GB
Calibration	Auto/Manual
PIP	Yes
Hot tracking	Yes
OSD recording	Yes
Battery	
Battery	Replaceable and rechargeable Li-ion battery (18650x1)
Battery life	7h
Interface	
Type C	Battery charge, Data transfer
Hotspot	Yes, App remote control
Environment	
Working temperature	-20°C to +50°C
Protection level	IP67
Weight, g	435±5
Dimension, mm	187(L)×56(W)×71(H)±5
Accessories	
External cable	USB Cable
Other accessories	Lens cloth, Charger, Battery and etc.
Laser Rangefinder	
Safety class	Class 1
Wavelength	905nm
Range	1000m
Accuracy	±1m

1.4 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.



1.5 Application Scenarios

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

1.6 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)



Lens cloth (x1)



Service and support card (x1)



User manual (x1)



Carry bag (x1)



Charger (x1)



Lithium battery (x2)



USB cable (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 Buttons and Controls

3.2.1 Button Features and Introduction

Button	Press	Long Press	Double Click
	Standby Mode	Power On/Off	Calibration
	Zoom In/Out	Rangefinder Switch On/Off	/
	Color Palettes	Outline	/
	Take a Photo	Take a Video	Enter Menu

After enter the menu			
	Confirm	Exit	/
	Move Up	/	/
	Move Down	/	/



3.2.2 Lens Adjustment

Diopter Adjustment

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



Lens Focusing

Manually adjust the objective lens focus when necessary.



3.2.3 Operation

3.2.3.1 Zoom

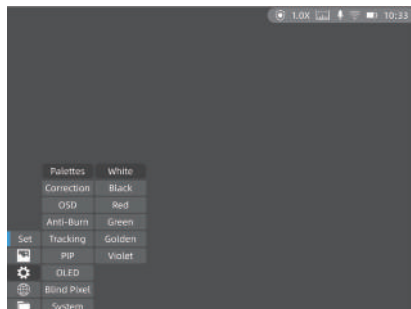


3.2.3.2 Pseudo Color Switch

Press the  button to switch color palettes.



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.



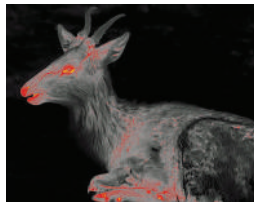
Color Palettes



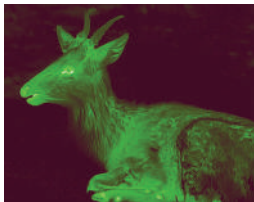
White



Black



Red



Green



Golden



Violet

3.2.3.3 Laser Ranging

Hold pressing  to turn On /Off rangefinder function.



3.3 Settings

Double click the  to enter Setting menu.

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

3.3.1 Image Setting

Select  to enter the Imaging Setting menu. There are five submenus for image setting, which are "Image Mode", "Sharpness", "Denoise", "Brightness" and "Contrast".

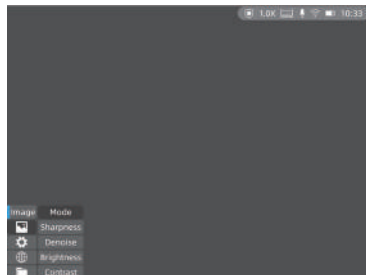


Image Setting		
Mode	Forest	Especially enhance target's detail. It's recommended to be used in bad weather conditions.
	Rainy	Gain both background and target's detail with wide dynamic algorithm.
Sharpness	0-10	Adjust image sharpness to make the image edge sharper. The recommended value is 5.
Denoise	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.

3.3.2 System Setting

Select  to enter the System Setting menu.



System Setting		
Palettes		Switch pseudo colors.
PIP	Picture-in-Picture	In the picture, the image is 2x enlarged from the center of the cross.
OLED	Hue	Blue, purple and gray are optional for OLED hue.
	Brightness	Adjust OLED brightness.
	Mode	Day or night mode.

Correction	Manual/ Auto	The mask works to calibrate the uniformity of images.
System	Audio	Turn On/Off audio recording.
	Shutdown	The device could be set to shutdown after 30mins, 60mins, or you could turn off the function.
	Logo	The logo on the screen could be turned on or turned off.
	Date	Time and Date could be set here.
	m/yd	The measuring distance unit could be set by meter or yard.
	Version	We could check the information of current version here.
	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	Select local time zone and adjust the date and time.

OSD	On-screen display	Enable this feature to decide if the menu icons display in the recorded videos.
Anti-Burn		Detector anti-burn function, it could be set by on/off. Once it detects harmful rays to the detector, the system will enable protection automatically.
Blind Pixel		The blind pixel in the picture can be replaced. We could replace blind pixels, save the current settings or cancel it.
Tracking		Turn on heat tracking to mark the target with the highest temperature in real time on the screen.

3.3.3 Date & Time Setting

Double press the **M** to enter the System submenu, then select Time and Date to set the time (hours and minutes) and date (year, month and day) respectively, as shown in the figures below.



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

3.3.4 Network Connection

Press  to enter the Network Connection menu.

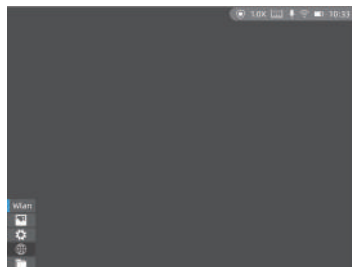
3.3.4.1 Download "ThermTec Outdoor" APP

You may download the "ThermTec Outdoor" APP through the QR code.

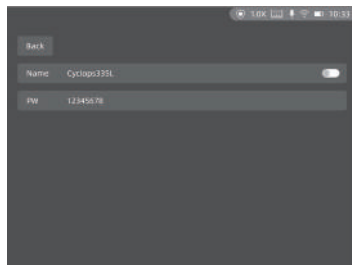


3.3.4.2 Connect via Wi-Fi

- 1 Short-press the  to enter the submenus of Network Connection, and select WIFI for configuration.
- 2 Turn on "ThermTec Outdoor" APP, select Wi-Fi, and type in the password on the mobile device to finish the connection. The initial password is 12345678.
- 3 When Wi-Fi is successfully connected, you can control the device via "ThermTec Outdoor" APP.



3.3.4. ①



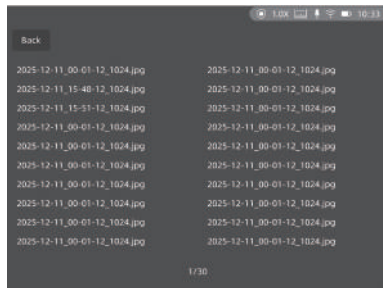
3.3.4. ②

3.3.5 File Management

Select Files and press the  to enter the Files. Select the image and video submenus to view the images and videos, and play the videos.

Image Viewing

- Press the  button to enter image files
- After selecting a certain image, press  to access further operations of the image, we could delete it, check check next one, pause the video or delete all the videos.



Video Viewing

- Select Record and press **M** to enter video files.
- Choose a certain video and press **M** to check the video.
- Further operations could be accessed here, we could delete it, check next one, pause the video or delete all the videos.

3.4 External Video & Data Reading

Video Output

Use the given AV video cable to output analog video.

Data Reading

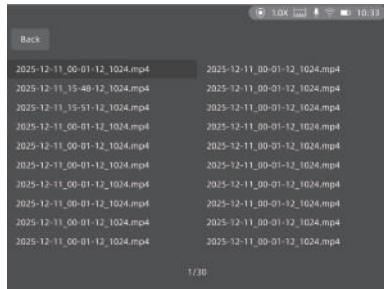
When external display is connected, the OLED of the device automatically turns off. Power on the device, use a type-c USB cable to connect with the computer to read the video and image data in the memory.

3.5 System Software Upgrade

Cyclops 3.0 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.

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.

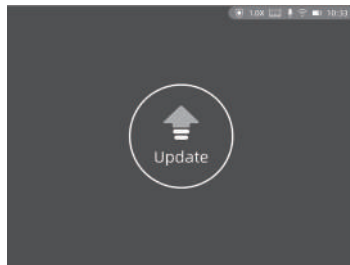


Upgrading via PC

- Please download corresponding upgrading package from official website: www.thermetytec.com. Connect the device to PC via type-c data cable.

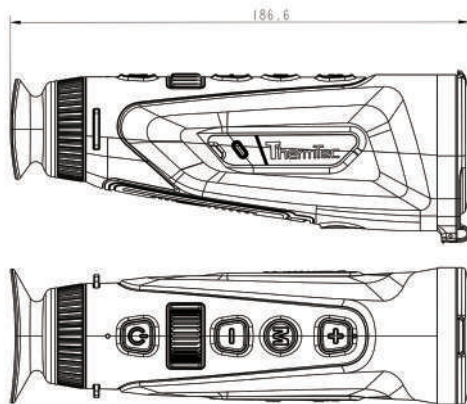
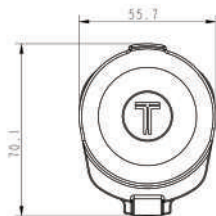


- Copy the related updating firmware to the storage file of Cyclops 3.0. Press **M** to select Update icon, and the system will prompt "Update".
- Enter version to check firmware version.



4 Technical Data

4.1 Dimensions



Cyclops 335L 3.0



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