

# **HDB Three Optical Channels Thermal Imaging Binoculars**

## **Product Manual**



## List of Abbreviations

IR: Infrared  
TV: Visible Light  
DMC: Digital Magnetic Compass  
GPS: Global Positioning System  
BD: BeiDou Navigation Satellite System  
LRF: Laser Rangefinder  
PAL: Television System  
USB: Universal Serial Bus  
DC: Direct Current Power Supply  
OLED: Display Screen  
PC: Personal Computer

## Chapter 1: Overview

### 1.1 Overview

The Three-light HD handheld device features dual high-definition observation channels, with a visible light resolution of 6.2 megapixels and an infrared resolution of 800,000 pixels, enabling day-and-night operation. The Binocular integrates a positioning module, electronic compass, and laser rangefinder for rapid, precise self-localization and target acquisition, enabling collection and storage of target data. Compact, lightweight, and low-power, it operates reliably in diverse climatic and environmental conditions.

Basic accessories include:

- I Three-light HD handheld Binoculars;
- I 1 set of batteries (\*optional);
- I Battery charger (\*optional);
- I Quick Start Guide;
- I User Manual;
- I Aviation connector cable;
- I Video cable.

## 1.2 Specifications

| Infrared Thermal Imaging              |                 |
|---------------------------------------|-----------------|
| Resolution                            | 1024×768 , 12μm |
| Operating Bandwidth                   | 8~14μm          |
| Field of View                         | 15.5°×11.6°     |
| Visible Light Imaging                 |                 |
| Resolution                            | 6.2 megapixels  |
| Field of View                         | 11.0°×8.2°      |
| Laser Ranging                         |                 |
| Wavelength                            | 1535nm          |
| Maximum Range                         | ≥3.0km          |
| Range Accuracy                        | 2m              |
| Positioning                           |                 |
| Positioning Mode                      | BD、GPS          |
| Horizontal Positioning Accuracy (CEP) | 5m              |
| Vertical Positioning Accuracy (PE)    | 10m             |
| Electronic Compass                    |                 |
| Magnetic Azimuth Measurement Range    | 0~360°          |
| Magnetic Azimuth Measurement Accuracy | 1.0°            |
| Pitch Angle Measurement Range         | -90°~+90°       |
| Pitch Angle Measurement Accuracy      | 1.0°            |
| Tilt Angle Measurement Range          | -180°~+180°     |
| Tilt Angle Measurement Accuracy       | 1.0°            |
| Display                               |                 |
| Resolution                            | 1440×1080       |
| Observation Mode                      | Binocular       |
| External Interface                    |                 |
| Aviation connector                    | DC/USB/RS232    |

|                         |                         |
|-------------------------|-------------------------|
| Video Interface         | HDMI                    |
| Wireless transmission   | WIFI                    |
| General                 |                         |
| Storage                 | 64G                     |
| Eyepiece Diopter        | -4~+4                   |
| Weight                  | ≤1.1kg                  |
| Operating Time          | ≥7h (Room temperature ) |
| Operating Temperature   | -40℃~+55℃               |
| Storage Temperature     | -55℃~+70℃               |
| Water Resistance Rating | IP67                    |

## 1.3 Packing

### 1.3.1 Unboxing Presentation

Use waterproof packaging boxes, Built-in shock-absorbing foam. Unboxing example shown below:



Figure 1 Product Unboxing Example

### 1.3.2 Battery

The battery is an optional accessory. You may purchase standard 18650 batteries independently or contact the manufacturer for purchase.

This Binocular Uses 4 x 18650 batteries. The manufacturer's specifications for a single battery are as follows:

I Standard Voltage: 3.7V;

I Voltage Output Range: 2.5V~4.2V;

### 1.3.3 Binoculars

Introduction to Components:

#### Top

(1) WIFI Antenna;

(2) Button×4;

(3) Positioning Module and Antenna cover.



Figure 2 Binoculars Top

## Front

(4) Infrared Objective Lens;

(5) Battery compartment;

(6) Laser ranging window;

(7) Visible light Objective Lens;



Figure 3 Front of Binocular

## Back

- (8) Proximity Light Sensor;
- (9) Aviation connector interface: Includes DC/USB/RS232;
- (10) Video Interface: Micro HDMI;
- (11) Microphone;
- (12) knob;
- (13) Eyepieces: Binocular;



Figure 4 Back of Binoculars

## Bottom

(14) Standard 1/4" Tripod Mounting Base

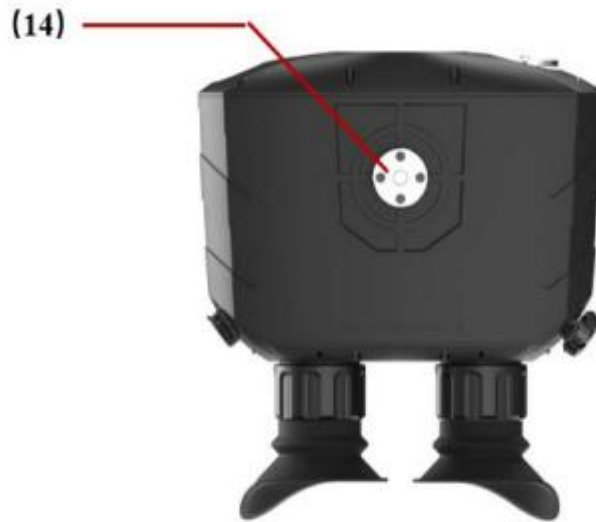


Figure 5 Bottom of Binoculars

| S.No. | Function or information                                                                                                                                                                                                                                                                                                                                                                      |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | Image Mode:  IR mode、  Visible light mode                                                                                                                                                                                  |
| 2     | Zoom: 1.0~4.0 Continuous zoom;                                                                                                                                                                                                                                                                                                                                                               |
| 3     | Sub-pattern display of the image: In infrared mode: White hot、Black hot、 False Color;                                                                                                                                                                                                                                                                                                        |
| 4     | Azimuth Display                                                                                                                                                                                                                                                                                                                                                                              |
| 5     | Remaining Internal Storage Capacity Prompt:  Ample storage space、  Storage space below 50%、  Storage space below 20%                   |
| 6     | Video output status:  HDMI HD video output                                                                                                                                                                                                                                                                  |
| 7     | WIFI Functional Status:  Standby、  turn off、  Transfer, The subscript in the lower-right corner indicates the number of connected users. |
| 8     | Battery Level Indicator                                                                                                                                                                                                                                                                                                                                                                      |
| 9     | External Power Supply Indicator                                                                                                                                                                                                                                                                                                                                                              |
| 10    | Current time display: Choose between system time or satellite time. Configure settings in the system menu.                                                                                                                                                                                                                                                                                   |
| 11    | Pitch Angle Display                                                                                                                                                                                                                                                                                                                                                                          |
| 12    | Target positioning information, updated after ranging                                                                                                                                                                                                                                                                                                                                        |
| 13    | Key Prompts                                                                                                                                                                                                                                                                                                                                                                                  |
| 14    | The device's positioning information, coordinate system, and units can be configured in the system menu.                                                                                                                                                                                                                                                                                     |
| 15    | Inclination Angle Display                                                                                                                                                                                                                                                                                                                                                                    |
| 16    | Crosshair: Indicates the target being aimed at within the current field of view.                                                                                                                                                                                                                                                                                                             |