DISCOVERYOPT

REDEFINE PRECISION

app

INSTRUCTIONS

DISCOVERYOPT THERMAL IMAGER

MODEL: DTD219BC/DTD235BC/DTD335BC/DTD642BC

⚠ Warning

- Damage caused by improper operation is not covered by the warranty. Do not place thebattery near a heat source or open flames, and avoid direct sunlight.

- The device has contains a built-in removable battery. Please use batteries of the correctspecifications.Improper use may cause explosion hazard.

- After the battery is installed or removed, the battery compartment must be safely closed.

- if the device emits smoke, produces an odor, or makes unusual noises,immediately disconnect the power and contact the dealer or service center.

- Do not direct the laser of the device directly into the eyes to avoid potenti al eye injury. Thelaser of the device irradiates flammable objects at close range, which may cause firehazards.Please maintain a certain safe distance during installation.

- Once the laser is turned on, do not aim it at glass, mirrors, or other highly reflective surfaces to avoid damaging the lens or sensor from reflected laser light.

- lf the device is malfunctioning, please contact the store where the device was purchasedor the nearest service center. Do not disassemble or mo dify the device in any way. (Thecompany does not assume any responsibility for problems caused by unauthorized modifications or repairs).

- Do not store the battery in clothing or pants pockets, as static electricity may cause a shortcircuit. Please store and use the battery properly. (The company does not assume any responsibility for problems caused by improper stora ge and use of equipment andbatteries).

⚠ Note

- Do not touch the lens directly. When the device is not in use, cover it with the dust cap to protect the lens.

- When cleaning the lens, use a dry soft cotton cloth or lens wiping paper to wipe the surface to avoid scratching the lens with hard objects.

- Battery usage recommendations:
  • The battery should be stored for a long time in a partially charged state (50% to 80%). Please charge at an ambient temperature of 0C to 35℃ (32℉ to 95℉), otherwise the battery life will be greatly shortened. Using the battery at an ambient temperature below 0℃ (32℉) may cause a decrease in battery capacity. This is normal and not a defect.
  • Using the battery at temperatures outside the range of -25℃ to 50℃℃ (-13℉ to 122℉) may reduce the battery life.

Product Introduction

The DTD219BC/DTD235BC/DTD335BC/DTD642BC series thermal imaging devices are equipped with a highly sensitive 12 μm detector, offering resolutions up to 640×512. They feature multiple lens options with different focal lengths, an open 2.4-inch high-resolution AMOLED display (600×450), and an integrated laser rangefinder. These devices provide clear long-distance imaging even in harsh environments, including poor visibility or complete darkness, enabling users to identify obstacles and accurately measure the actual distance to the target.
In addition, you can easily connect to our mobile application for real-time viewing and sharing of findings. The DTD219BC/DTD235BC/DTD335BC/DTD642BC series is specifically designed for a wide range of applications, including observation, rescue operations, hiking, and more.

Product Features

- Dual-use for Scouting and Aiming
- Quick-detach mount
- Ballistic Calculation
- Stepless Zoom Algorithm
- 2.4-inch AMOLED Display
- Laser Rangefinder with 1,000 m Range
- Built-in High-Speed 32GB eMMC Storage
- Compact Design
- Hotspot Tracking
- Convenient Battery Installation
- UVC Digital Video Real-Time Output
- Electronic Zoom
- Wi-Fi Image Transmission
- Photo/Video Capture and Playback

Model	DTD219BC	DTD235BC	DTD335BC	DTD642BC
sensor				
Type	Vanadium oxide uncooled			
Resolution	256x192	256x192	384x288	640x512
Pixel Size	12μm			
Spectral Range	8-14μm			
NETD	≤ 30 mk@25℃℃,@F/1.0			
Frame Rate	50Hz			
Optics				
Focal Length	19mm/F1.0	35mm/F1.0	35mm/F1.0	42mm/F1.0
Field of View	9.2°X7.0°	5.0°X3.8°	7.5°X5.7°	11.0°X8.2°
Base Magnification	1.2X	2.2X	1.5X	1.0X
Electronic Zoom	1X-4X			
Focus Method	Manual			
Detection Distance				
Human	897m	1652m	1652m	1889m
Rabbit	211m	389m	389m	472m
Display				
Type	2.4"AMOLED			
Resolution	600X450			
Functions				
Laser Rangefinder	5-1200m(905nm)			
Laser Pointer	Supported (red light)			
Hotspot Tracking	Supported			
Picture-in-Picture	Supported			
Photo/Video Playback	Supported			
Gyroscope	Supported			
Crosshair	Supported			
Ballistic Calculation	Precise/Simple/BDC/Ballistic Record table			
Zeroing Method	Manual			
Scene Modes	General, High Contrast, Low Contrast			
Pseudo color	White Hot, Black Hot, Red Hot, Iron Red			
Correction Modes	Auto Shutter, Manual Shutter, No Shutter, Scene Correction			
Wi-Fi Transmission	2.4GHz,802.11 b/g			

Model	DTD219BC	DTD235BC	DTD335BC	DTD642BC
System				
Language	Simplified Chinese / English			
Storage Capacity	32 GB (approx. 28 GB usable)			
Image/Video Format	.JPG/.MP4			
Real-Time Image Output	UVC Digital Video			
Power				
Battery	Single removable 18650/18500 battery			
Operating Time	6H	6H	5H	4H
Interface	Type-C 5V(USB)			
Physical Parameters				
Operating Temperature	-20℃ ~ +60℃			
Storage Temperature	-30℃ ~ +70℃			
Humidity	10%~95%，non-condensing			
Mechanical Shock	1000G			
Protection Rating	IP66			
Weight (without battery or quick-detach device)	276g	290g	318g	328g
Dimensions (L × W × H)	85x75x81.5mm	96x75x81.5mm	108x75x81.5mm	115x75x81.5mm

Packing list

The Device
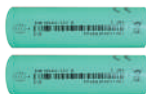
Cable

Charger

Mount

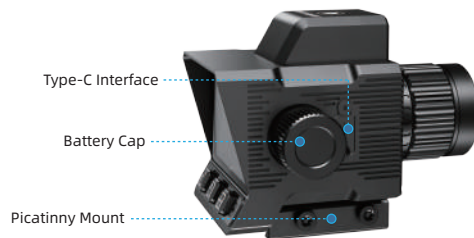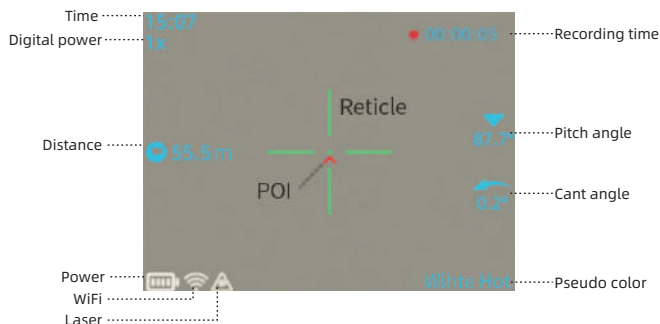2 Batteries

Quick-detach Mount

2pcs Wrench

Handle

30MOA Base

Product component diagram

Power key

Display

Multi-function Dial

Scene Key
Function Key
Ranging Key

Camera Button

Type-C Interface

Battery Cap

Picatinny Mount

Laser Rangefinder

Thermal Lens

Laser Indicator

Time ········· 15:07
Digital power ········· 1X
Recording time ········· 00:00:05
Reticle
Distance ········· 55.5m
Pitch angle ········· 87.7°
POI
Cant angle ········· 0.2°
Power ·········
WiFi ·········
Laser ·········
White Hot ········· Pseudo color

Main interface button function introduction		
Button	Function	
Multi-function Dial	Short Press	Long Press
	Single ranging / Ballistic calculation	Enter menu
	rotate	
	Rotate Forward	Digital zoom in
	Rotate Backward	Digital zoom out
Button Name	Short Press	Long Press
Ranging Key	Single ranging / Ballistic calculation	Continuous ranging (On/Off)
Function Key	Picture-in-picture On/Off	Laser pointer On/Off
False color Key	Change false color	-
Power Key	-	Power On/Off / Screen off
Shutter Key	Take photo	Video recording (Start/Stop)
Note: Long-press the power button for 10 seconds to force shutdown.		

◆ **Laser indicator:** short press the knob to turn on/off the laser indicator.

Laser Designatio   < Off >
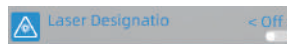
◆ **False color:** Short press the knob to switch color modes (White Hot / Black Hot / Red Hot / Iron Red).

Color mode   Black hot
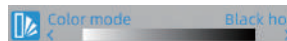
◆ **Scene mode:** Short press the knob to switch the scene usage mode (general/high contrast/low contrast).

Scene mode   General

◆ **Brightness:** Short press the knob to adjust the display brightness (1-5 levels)

Image brightness   < 3 >
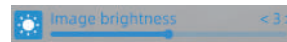
◆ **Image contrast:** Short press the knob to adjust the contrast of the displayed infrared image (1-5 levels).

Image contrast   < 3 >
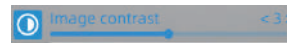
◆ **Picture-in-picture:** Short press the knob to turn on/off the picture-in-picture function. You can also choose the center of the picture-in-picture to be the center of the reticle or the impact point.

Picture-in-Picture   < Off >

◆ **Hotspot tracking:** Short press the knob to turn on/off the hotspot tracking function.

Hotspot tracking   < Off >

♦ **Image correction:** Short press the knob to switch the image correction mode (auto/background/no block)

♦ **Bad pixel correction:** Short press the knob to enter the blind pixel calibration interface. In the blind pixel calibration interface: scroll the knob to adjust the cursor, short press the knob to switch between X coordinate and Y coordinate, and long press the knob to exit.
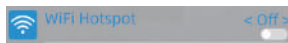

♦ **Brightness:** Short press the knob to adjust the display brightness (1-5 levels).

♦ **Language:**

♦ **Wi-Fi hotspot:** short press the knob to turn on/off the Wi-Fi hotspot (Wi-Fi name: dtsDevice-xxxx [xxxx is the last 4 digits of the wireless physical address], password: 12345678).

♦ **Shutdown time:** short press the knob to select the automatic shutdown time when the device is not operated (do not shut down/30 minutes/60 minutes/90 minutes/120 minutes).
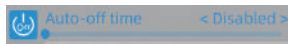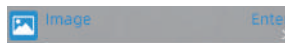
♦ **Date/Time:** Short press the knob to enter the date and time setting interface, long press the knob to return to the previous menu, short press the power button to return to the main menu. Rotate the knob to change the cursor position, short press the knob to enter the function item where the cursor is located, the blue font lights up to indicate that it has entered the editing state. In the editing state: rotate the knob to adjust the value, short press the knob to switch sub-items, long press the knob to exit the editing state.
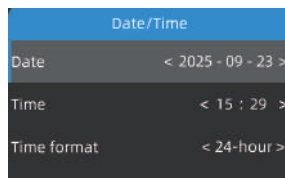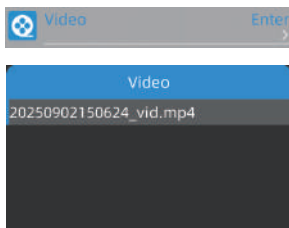

♦ **Photo:** Short press the knob to enter the photo preview interface, long press the knob to return to the previous menu, short press the power button to return to the main menu. Short press the knob to preview the photos stored in the device, rotate the knob change the cursor position, short press the knob to preview the currently selected photo, in the photo preview display interface, rotate the knob to switch to the previous or next photo, press the camera button to delete the current photo.
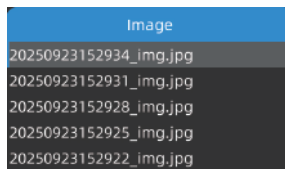
♦ **Video:** Short press the knob to enter the video preview interface, long press the knob to return to the previous menu, short press the power button to return to the main menu Short press the knob to preview the video stored in the device, rotate the knob to change the cursor position, short press the knob to preview the currently selected video, in the video preview display interface, short press the knob to play/pause the video, rotate the knob to switch to the previous or next video. Short press the camera button to delete the current video.

♦ **IMU calibration:** Short press the knob to perform IMU calibration (Note: the device needs to be placed flat on a horizontal surface).

♦ **Reticle:** Short press the knob to enter the reticle configuration interface, long press the knob to return to the previous menu, short press the power button to return to the main menu.
You can configure labels, patterns, distances, horizontal offsets (X coordinates), vertical offsets (Y coordinates), colors (colors), lines (thickness), rotate the knob to change the cursor position, short press the knob to enter the function item where the cursor is located, and the blue font lights up to indicate that you have entered the editing state. In the editing state: scroll the knob to adjust the value, short press the knob to exit the editing state, short press the camera key to zoom the image, and long press the camera key to freeze the screen. Note: Each group of labels is an independent parameter.
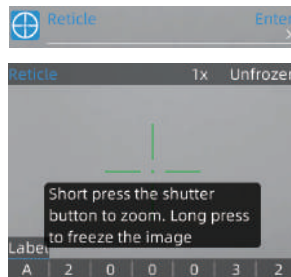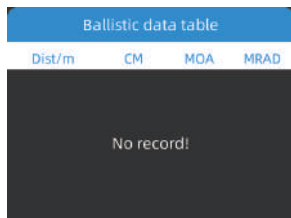

♦ **Ballistic calculation:** Short press the knob to enter the ballistic calculation interface, rotate the knob to change the cursor position, short press the knob to enter the function item where the cursor is located, long press the knob to return to the previous menu, short press the power button to return to the main menu.
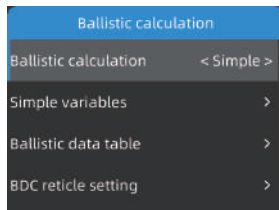
◆ **Ballistic record table:** You can customize the input of various ballistic parameters (distance, bullet drop point, etc.), short press the camera button to add a record, long press the camera button to delete the current item, rotate the knob to change the cursor position, short press the knob to enter the function item where the cursor is located, and the blue font lights up to enter the editing state. In the editing state: rotate the knob to change the sub-item, short press the knob to pop up the input box, enter the number and select √ to save.


◆ **BDC reticle:** Similar to the ballistic record table, this function can customize the input of the trajectory drop amount at different distances and display it on the reticle.
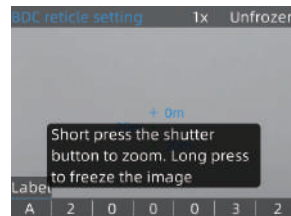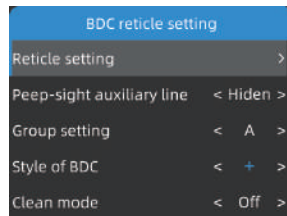
◆ **Authorization information:** Short press the knob to enter the authorization interface, you can view the device authorization list information, rotate the knob to change the cursor position, short press the knob to pop up the delete authorization dialog box, long press the knob to return to the previous menu, and short press the power button to return to the main menu.
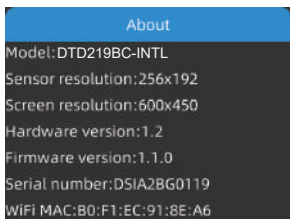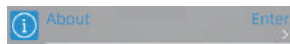

◆ **System settings:** Press the knob to enter the system settings interface, long press the knob to return to the previous menu, and short press the power button to return to the main menu.
The device can be restored to factory settings (the reticle and ballistic calculation parameters will not be reset) and the storage can be formatted (formatting disk data, i.e., photo and video files).
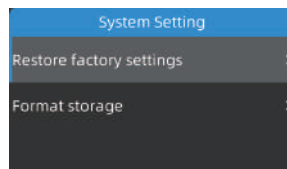
Menu options

♦ **About this device:** Short press the knob to enter the shutdown interface, long press the knob to return to the previous menu, short press the power button to return to the main menu.
You can view the relevant information of the current device (model, detector resolution, screen resolution, hardware version, firmware version, serial number, wireless MAC address.
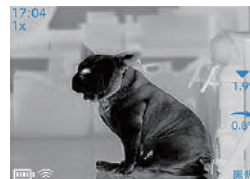


```
About                          Enter
                                  >
```

```
                  About
Model:DTD219BC-INTL
Sensor resolution:256x192
Screen resolution:600x450
Hardware version:1.2
Firmware version:1.1.0
Serial number:DSIA2BG0119
WiFi MAC:B0:F1:EC:91:8E:A6
```

♦ **Upgrade Firmware:** Over-the-air OTA upgrade, you can connect the device through the mobile App to upgrade the device's firmware.

False color
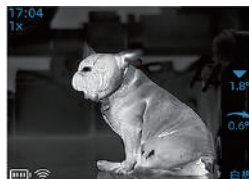
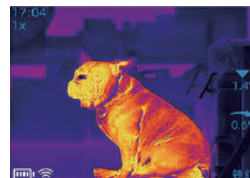White Hot

Black Hot

Red Hot

Iron Red

Models

DTD219BC DTD235BC DTD335BC DTD642BC