Handheld Thermal Imager

Real-time thermometry · 2.8 inch screen · Photo / video

USER MANUAL

Model **HT-160D · HT-256D**



■ 2.8 inch screen · -20~550°C · 3200mAh

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1. Safety Instruction

To protect yourself and others from injury or to protect your device from damage, please read all the information below before using your device.

1) Notes

① Do not direct the equipment at very high intensity thermal radiation sources, such as the sun, lasers, spot welders, etc., which may cause damage to the equipment.

② Do not use or store the instrument in an environment that exceeds the permitted operating temperature or storage temperature of the equipment, which may cause damage to the equipment.

③ Do not knock, throw or vibrate instruments and accessories to avoid damage.

④ Do not touch the device or USB port with your wet hand to avoid damage.

⑤ The standard charging adapter for this device has specifications of 5V2A. Please note during use: excessive input voltage may damage the device, while insufficient current may result in slower charging or failure to charge properly.

⑥ Do not use liquids with solubility or similar properties on equipment and cables, as this may cause damage to the devices.

⑦ When cleaning this device, please follow the following measures: a. Non-optical surfaces: when necessary, clean the non-optical surfaces of the thermal imager with a soft, lint-free cloth; b. Optical surface: when using a thermal imager, avoid contaminating the lens's optical surface, especially by touching the lens with your hands, as sweat residues can leave marks on the lens glass and may corrode the

optical coating layer on the glass surface. If the optical lens surface becomes contaminated, gently wipe it with professional lens paper.

⑧ Please keep the device stable when in use and avoid severe shaking.

⑨ This product may emit occasional slight "clicking" sounds during operation, which is the "shutter refresh" sound of the lens and a normal operational phenomenon.

2) Warnings

① If you find that the product has smoke, sparks or burnt odor during use, please stop using immediately; to ensure personal safety, power off the device.

② Do not charge the device with wet hands; charging with wet hands poses a risk of electric shock.

③ When not charging, please unplug the adapter from the power socket; after the adapter is powered on for a long time, it is possible to overheat, deform, and even cause fire.

④ If the adapter or USB cable is damaged, stop using it immediately. A damaged adapter or USB cable may cause a fire due to overheating or short circuit.

⑤ If the device is not used for a long time, please store it in a cool and dry environment and charge the device regularly, otherwise the power will be exhausted and the battery life will be shortened.

3) Do not disassemble the equipment, which may cause damage to the equipment and forfeit the warranty rights; if there is a fault, please contact the company for professional maintenance.

2. Product Specifications

Model	HT-160D	HT-256D
Infrared		
Detector type	Vanadium oxide (VOx) microbolometer	
IR resolution	160×120	256×192
IR wavelength	8~14μm	
Pixel spacing	17μm	12μm
Focal length	3.2mm	3.5mm
IFOV	5.31mrad	3.43mrad
Image frame rate	25Hz	
NETD	≤40 mK (@25℃, F#1.0)	
Focal adjustment mode	Fixed focal	
Field angle	50°×37.2°	
Visible light resolution	2 million	
Display screen	2.8 inch	
Display resolution	240×320	
Temperature measurement		
Temp. measured range	-20℃~550℃	
Temp. accuracy	±2℃ or ±2% of the reading, whichever is greater	
Minimum scale	0.1℃	
Temp. measurement mode	Industrial temperature measurement	

Temp. unit	℃/℉/K
Temp. measurement display	Center point / highest point / lowest point temperature display
Image mode	Thermal imaging / visible / fusion / PIP
Image / video format	JPEG/MP4
Photo / video	Support
Fill-in light LED	Support
Language	Supports 10 languages
Storage memory	16G 16G
Data port	Type-C①
Battery	3200mAh (non-removable)
Charge time	≤4h
Power of device	≤1.5W
Work time	About 7h
Operating / storage environment	
Work temperature	-10~50℃
Work humidity	10%~90%RH (non-condensing)
Storage temperature	-20~60℃
IP rating	IP54
Certifications	CE、FCC、ROHS
Other parameters	
Device weight	About 390g
Device size	231mm×79.2mm×84.9mm
Accessories	Micro-lens

Note ①: After the Type-C port is plugged in, the device only displays "USB connected".

3. Product Structure

Item	Description	Item	Description
1	Type-C port	7	Trigger button
2	LCD	8	Protect cover
3	Button	9	Fill-in light LED
4	Handheld area	10	IR detector
5	Tripod fixing screw holes	11	Visible camera
6	Hang hole		

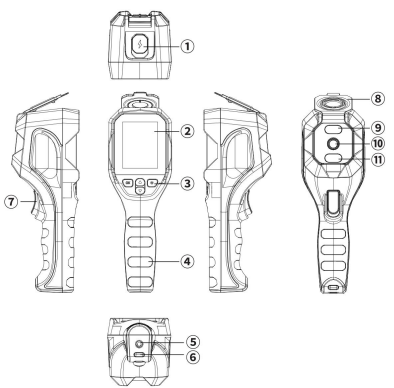


Fig. 1 Product structure

Both models are equipped with a visible camera.

4. Display Illustration

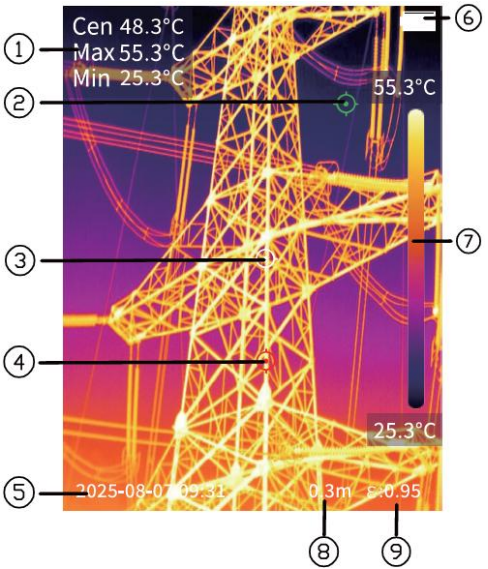


Fig. 2 Display interface

Item	Description	Item	Description
1	Center / highest / minimum temperature value	6	Quantity of electricity
2	Tracking the lowest temperature point	7	Pseudo color bar
3	Observing the center point of the image	8	Temperature measurement distance

4	Tracking the highest temperature point	9	Emissivity
5	Date and time		

5. Button Illustration

Button	Current status of device	Short press	Long press
Power button	Power off	/	Power on
	Main interface	Sleep screen / wake up	Power off / 10S forced shutdown
	Menu interface	Go back	Power off / 10S forced shutdown
OK button	Main interface	Enter menu	Turn on/off the fill light
	Menu interface	OK	Delete photo/video files
Page up	Main interface	Switch pseudo color	Shutter calibration①
	Menu interface	Upward	Continuous upward②
Page down	Main interface	Switch image mode	Switch fusion ratio
	Menu interface	Downward	Continuous downward②
Trigger button	Main interface	Take a photo	Record a video
	Menu interface	/	/

Note ①: During shutter calibration the thermal image freezes for about 1~2 seconds.

Note ②: Continuous scrolling is only supported in the photo/video file list, photo browsing and value-wheel style settings (e.g. emissivity).

6. Menu

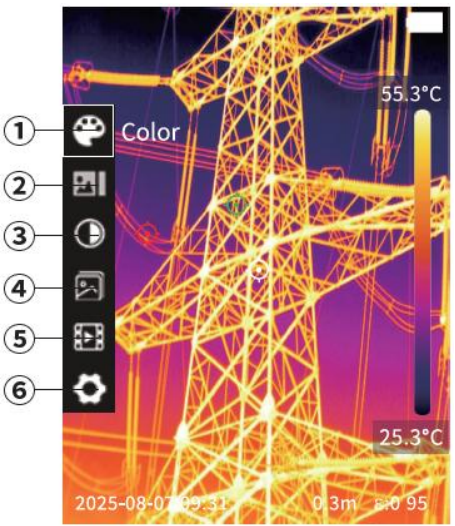


Fig. 3 Main interface shortcut menu

Item	Function	Description
1	Color palette	Switch between "White hot / Black hot / Rainbow / Iron / Red hot / Fusion".
2	Image	Switch image mode between "Thermal imaging / Fusion / PIP / Visible light".

3	Image parameter	Switch between "Enhanced / Standard / Soft" mode.
4	Photo	View and delete photo files.
5	Video	Play and delete video files.
6	Setting	Enter system settings; see the table below for each item.

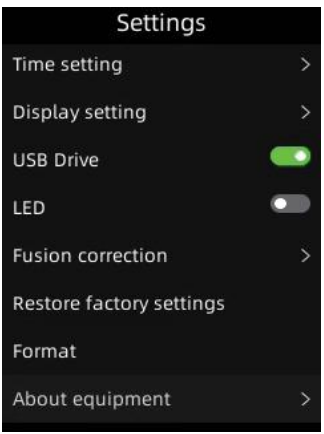


Fig. 4 Setting menu (1)

Setting item	Description
Auto power off	Set "Off / 5 minutes / 10 minutes / 20 minutes / 30 minutes".
Brightness	Screen can be set to "low light / medium light / high light".

Language	Switch between "简体中文、繁体中文、English、Русский язык、日本語、Deutsch、Français、Italiano、한국어、Język polski".
Unit	Switch between Celsius (℃) / Fahrenheit (℉) / Kelvin (K).
Measure parameter	1) Atmos. Temp.: can be set within -10℃~50℃; 2) Distance: can be set within 0.3~3m; 3) Emissivity: can be set within 0.01~1, refer to "Common Emissivity".
Temp. range	Switch between "low range (-20℃~150℃) / high range (100℃~550℃)".

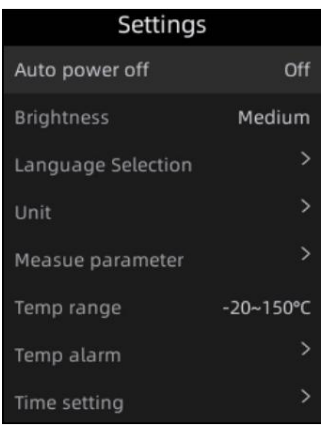


Fig. 5 Setting menu (2)

Setting item	Description
Temp. alarm	1) High temp. alarm: on/off, set range -20℃~550℃; 2) Low temp. alarm: on/off, set range -20℃~550℃; 3) Alarm auto photo: on/off, capture interval 5s~30s, capture number 1~50.
Time settings	Set the date, time and time format.
Display setting	Turn on/off the display of "highest / lowest temperature, center point, emissivity, temperature measurement distance, date, pseudo color bar".
USB Drive	On - the device can be recognized as a USB flash drive by the computer; Off - only supports charging.
LED	Turn on/off.
Fusion correction	Adjust the overlap of the fused images.
Restore factory settings	Restore to default settings.
Format	Format the device disk.
About equipment	View "model / firmware version / application version / SN / disk capacity".

7. Common Emissivity

Emissivity differs between materials. Before measuring, select the emissivity matching the target material.

Material	Emissivity
Wet soil	0.95
Glass	0.94

Red brick	0.95
Skin	0.98
Water surface	0.95
White paper	0.93
Black cloth	0.98
Wood	0.87

8. Warranty Service

Thank you for choosing this product. In order to fully enjoy our after-sales service support, please keep the purchase receipt properly as warranty proof.

(1) The warranty period of this product is 1 year. The warranty period starts from the date of the first purchase of the product, and the purchase date is based on the invoice date. If there is no valid invoice, the warranty period will be calculated from the date the product leaves the factory. If the invoice date is later than the actual delivery date, the warranty period starts from the actual delivery date.

(2) Non-warranty:

① Out-of-date;

② Cannot produce the valid warranty certificate and the valid original purchase invoice or receipt, the original serial number label has been altered, replaced or torn, the product has no serial number, or the model or number on the warranty certificate is inconsistent with the physical product;

③ Failure or damage caused by misuse, accident, modification, inappropriate physical or operating environment, natural disaster, power surge and improper maintenance or storage;

④ Failure or damage caused by third-party software, services or actions;

⑤ Normal discoloration, ageing, dents and scratches of the housing during use;

⑥ The product can operate without interruption or error;

⑦ Consumable parts, except where the failure results from a defect in materials or workmanship;

⑧ Use not in accordance with the accompanying manual, or use for purposes or environments other than those intended, or any other circumstance in which the company verifies, after confirmation, that you have violated the manual.

(3) The company is not responsible for additional commitments made to you by the seller or any third party; please seek fulfilment from such third parties.

Specifications and technical parameters are subject to change without prior notice for continuous product improvement.

Notes

For calibration dates, test results and service history. Version V1.0