

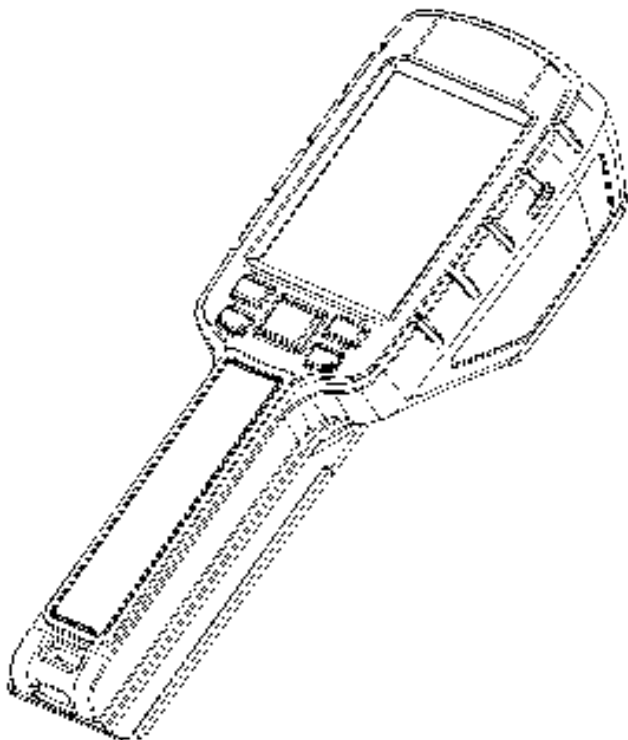
VEVOR[®]

JD-109 Thermal Camera
USER MANUAL



VEVOR®

JD-109 **Thermal Camera** *Instruction Manual*



NEED HELP? CONTACT US!

Have product questions? Need technical support? Please feel free to contact us:

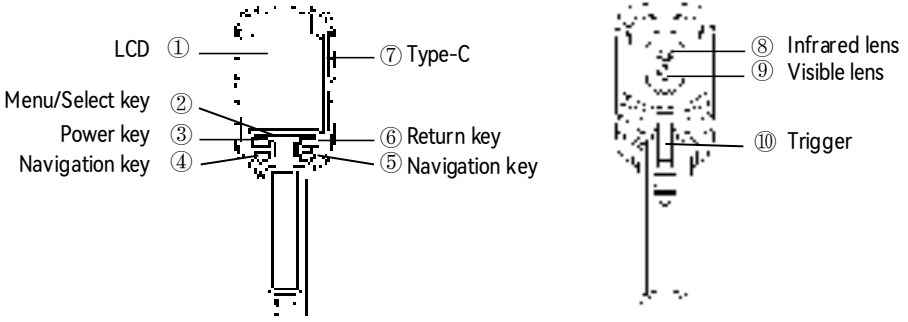
✉ CustomerService@vevor.com

PRECAUTIONS

1. When using the device, please keep it stable. Do not shake the device violently and avoid dropping it.
2. If the device is damaged, dropped or corrected, it may cause incorrect measurement results.
3. Do not use the device outside of the permitted temperature operating range, and do not store it in areas where temperatures exceed the permitted range. Failure to do so will result in damage.
4. Don't aim the device directly at unknown high-intensity heat radiation sources, such as the sun, lasers, electric welding machines, etc.
5. Don't use this device in explosive, steamy, humid or corrosive environments.
6. Don't use soluble or similar liquids in the equipment, which may cause damage to the device.
7. The device uses a built-in lithium-ion battery. Follow the listed guidelines carefully to use the battery safely:
 - (1) Don't try to open or disassemble the battery at any time.
 - (2) Don't place the battery in a high-temperature environment or near high-temperature objects, and don't throw the device or battery into a fire.
 - (3) Charge the device correctly according to the instructions in this manual and follow the precautions. Incorrectly charging the battery can damage the battery and lead to personal injury.
 - (4) Avoid long periods of inactivity. The battery should be charged once every two months. Failure to charge the battery will result in operation complications and difficulties during future charges.
 - (5) The battery is a wearable product. If you find that the use time of the device is greatly reduced, please use the original battery recommended by our company to replace it.
 - (6) If the device has been operating for an extended period, the surface may become hot. When the surface is hot please stop charging the device and move it to a cool location. Avoid prolonged contact with the device when the surface is hot.
 - (7) If you press the power button and the device does not start, this could indicate that the battery has been drained. It takes roughly 15 minutes to charge the device to a level appropriate for initial startup. Once the device is ready, attempt to turn it on again.
 - (8) Batteries pollute the environment to a certain extent. Please don't discard them randomly. Please recycle it correctly according to local regulations.

INSTRUMENT INTRODUCTION

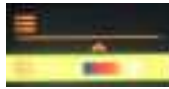
This device is a tool-based handheld infrared thermal imager, which can identify the combination of surface temperature measurements and real-time thermal images. With 3,600 infrared pixels, potential problems can be clearly displayed on the color display, which helps users quickly and accurately locate the center point of the measurement cursor and measure the temperature. In order to increase the degree of recognition, the image can be mixed from a full thermal image to a full visual image.



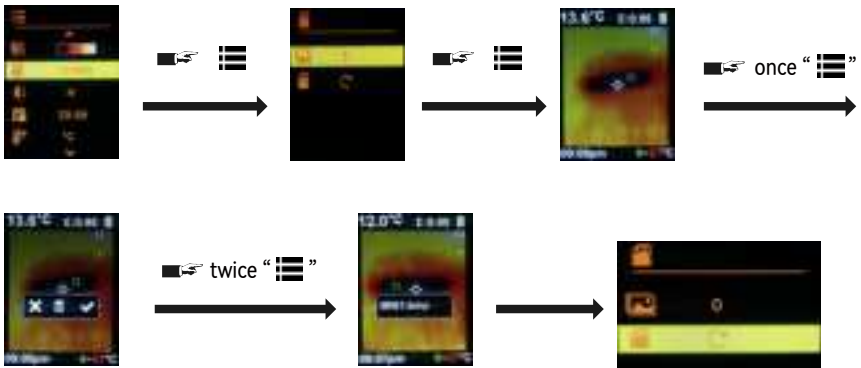
1. Photograph: In the real-time observation interface, short press “”, LCD display “”, press “” save picture, press “” to return to the previous screen.

2. Menu: Press “” enter the main menu, press “” enter options to set parameters:

(1) Color palette: press “” choose from five modes: iron red, rainbow, high-contrast rainbow, white hot, and black hot.



(2) View and delete pictures:



Press “” delete picture, press “” return to the previous screen.

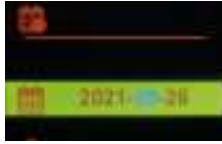
Press “” or “” view pictures.

Delete all pictures.

(3) Brightness: “H”=100%, “M”=75%, “L”=50.



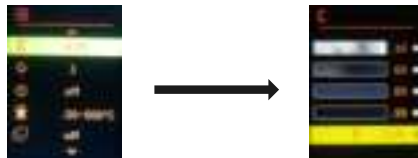
(4) Time: Press “☰”, enter options, press “◀ / ▶”, to add or subtract time, press “↩” to move cursor, press “☰” to confirm.

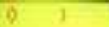



(5) Temperature unit switch: Press “☰” choose °C or °F.





(6) Emissivity setting: press “☰”, move the cursor to the required emissivity, press “☰”, confirm.

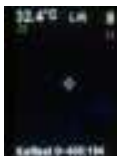


(7) Cursor:  The default is 3, press “☰” choose the right number of cursors.

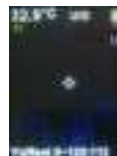
(8) Shutdown timer:  The default is off, press “☰” to choose a switch off time, 5min, 10min, 25min.

(9) Alarm system:  The Default alarm temperature: 500°C and -20°C, press “☰” enter settings, press “◀ / ▶” set the alarm value, the default alarm sound is on.



(10) Image fusion:  Press “☰” enter image fusion, when displayed as “on”, return to the main menu to adjust the fusion. Press “◀ / ▶” adjust the face. Press “☰” to confirm, long press “↩” to quit, then back the real-time observation interface.



Left and right picture fusion



Top and bottom picture fusion

(11) Biological temperature measurement mode:  Press “” to confirm, the default is off. The temperature measurement error is $\pm 0.4^{\circ}\text{C}$.

3. Connect to the computer: Use the USB cable provided to connect to the computer to view or delete pictures.

TECHNICAL PARAMETERS

LCD	2.8-inch full-view high-resolution color screen
Infrared resolution	60×60 Pixel
Visible light resolution	200,000 pixels
Field of view	68° × 68°
Thermal sensitivity	0.15 °C
Temperature measurement range	-20 °C~500 °C
Precision	$\pm 2^{\circ}\text{C}$ or $\pm 2\%$ (Larger value)
Emissivity	0.1~0.99
Image capture frequency	9Hz
Wavelength range	8um~11.5um
File format	bpm
Operating temperature	0 °C ~ 40 °C
Storage temperature	- 20 °C ~ 60 °C
Infrared resolution	10 % RH ~ 85 % RH

EMISSIVITY OF COMMON OBJECTS

Material	Emissivity	Material	Emissivity
Wood	0.85	Black paper	0.86
Water	0.96	Polycarbonate	0.8
Brick	0.75	Concrete	0.97
Stainless steel	0.14	Copper oxide	0.78
Adhesive tape	0.96	Cast iron	0.81
Aluminum plate	0.09	Rust	0.8
Copper plate	0.06	Gypsum	0.75
Dark aluminum	0.95	Paint	0.9
Human skin	0.98	Rubber	0.95
Asphalt	0.96	Soil	0.93

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