

User's Manual

Infrared Thermal Imager



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1. Safety

Before operating this instrument, please read the following instructions and use them according to the specifications. Do not use this instrument in explosive, steam, humid or corrosive environment.

Use of environmental conditions:

- 1) Relative humidity less than 80% RH (non-condensation)
- 2) Operating temperature $-5 \sim 40^{\circ}\text{C}/23 \sim 104^{\circ}\text{F}$

Maintenance and cleaning

- 1) Repair or repair shall be carried out by professionals, not by instructions alone.
- 2) Clean the case with cloth regularly. Do not use solvent or detergent to clean this form.

Safety Symbol

 Compliance with european CE safety standards

2. Description

This instrument is an infrared thermal imager which combines surface temperature measurement with real-time thermal image. The traditional single-point infrared thermometer needs to measure each component one by one, while the thermal image does not need to do so, thus saving the measurement time. Potential problems can be clearly displayed on the color display screen, which helps users quickly and accurately locate the center point to measure the cursor and temperature.

In order to increase the recognition, the product is also equipped with a visual camera. According to the need, the image can be mixed from the whole thermal image to the whole visual image. Hot and visible images can be saved to the memory card. Callable images are used to generate reports and print. The product is easy to use and can be tested within seconds after opening. This product is an ideal choice for electricians and

maintenance technicians, and can be used to quickly find the problem area.

3. Features

1. TFT full view color screen display
2. Dual MCU processors, refresh faster
3. Hot and cold point temperature markers can guide users to the areas with the highest and lowest temperature in the thermal image.
4. Selectable palette
5. Hybrid imaging of visual and infrared images
6. Images capture saved in SD card
7. Connecting PC with USB can read the image stored in instrument directly.
8. Connect USB with other power supply and meter, USB can power supply to meter directly

4. Technical Data

	XE-26	XE-27
Infrared temperature range	-20~380°C/-4~716°F	
Infrared temperature accuracy	>0°C; ±2% or reading±2°C/3.6°F<0°C; ±3°C/5.4°F Note:Accuracy is measured in an environment of 18-28°C	
Ambient temperature range	N/A	-20~70°C/-4~158°F
Ambient temperature accuracy	N/A	±1.0°C/1.8°F
Ambient humidity range	N/A	0~100%RH
Ambient humidity accuracy	N/A	35~85%RH; ±5%RH
		other ±10%RH
Infrared image resolution	33X33	
Visual image resolution	2 megapixel	
Field Angle	33°×33°	
Thermal Sensitivity	0 . 15°C/0 . 27°F	
Emissivity	Adjustable 0 . 1~1 . 0	
Image Capture Frequency	9HZ	
Wavelength Range	8-14um	
Focus Mode	Fixed	

Palette	Rainbow color, white hot, iron red 1, iron red 2
View Options	Blending of the visual and the infrared from full infrared to full visual in 25 % steps
File Format	BMP
Storage	8GB Standard 8GB Micro SD card, supporting up to 16GB
Memory View	Scroll all saved images and view them on the screen
Auto Power Off	3minutes, 5minutes, 10minutes, are optional
Working Temperature	- 5~40°C/23~104°F
Storage Temp.Range	- 30~60°C/ - 22~140°F
Relative Humidity	10~80%RH
Power Supply	4*LR6 AA battery and USB power supply
Battery life	12 hours
Weight/size	200g ±5g excluding battery/ 198*98*55mm

5. Meter description

- (1) Infrared imaging lens
- (2) Visible light camera
- (3) LED lighting
- (4) Image capture key
- (5) Installation nuts for battery cover and tripod
- (6) Up button
- (7) Menu key/confirmation key
- (8) Down button
- (9) Power key/return key
- (10) TFT high definition color screen
- (11) SD card, USB interface
- (12) 2) Temperature and humidity sensor



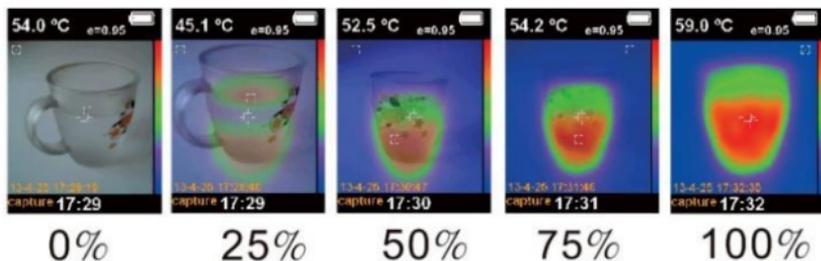
6. Key Function Description

6.1 "" Function: hold down "_utton about 3 seconds, and the instrument can be controlled to turn on and off. In setting mode, press "_utton to exit the function.

6.2 ""Function: press "_utton one time, the instrument enters the setting menu interface. In menu setting mode, ""button to determine the function.

6.3 "" Function: in measuring mode, press this key to change the mixed image from Adjust 0% to 100% in 25% steps. In the main menu mode, press the key to go up. In secondary menu mode, to increase the value

6.4 "" Function; in measuring mode, press this key to adjust the mixed image from 0% to 100%, step size 25%. In the main menu mode, press the key down. In secondary menu mode, to reduce the value



6.5 Image capture function of trigger key :

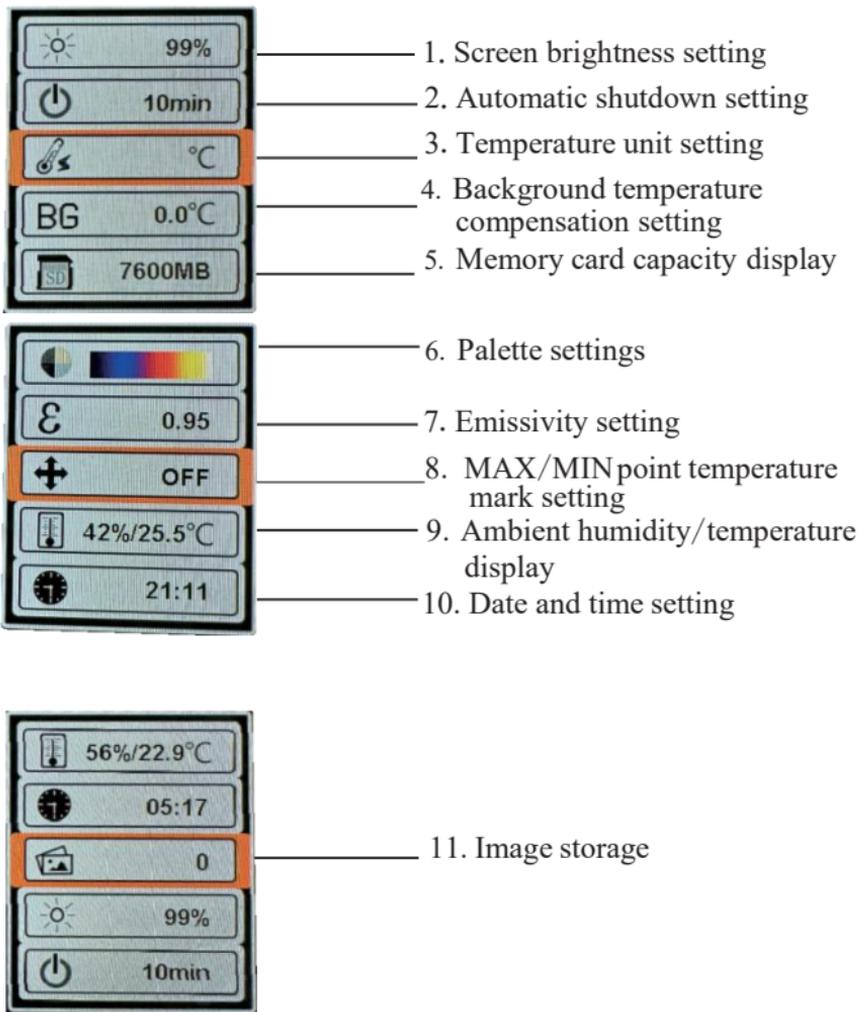
In measuring mode, press the trigger button, and the screen will display the "  " symbol, indicating that the image will be saved . If the "  " symbol is displayed, indicating that the image was not saved. Please check whether the SD card is inserted or full.

SD card with 8GB memory is standard configuration, and it can support up to 16GB SD card.

Standard 8GB SD card, supporting up to 16GB SD card

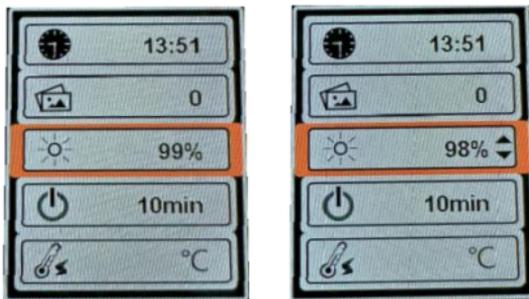
6.6 Long press the trigger key to turn on and off the LED lights.

7.main menu description



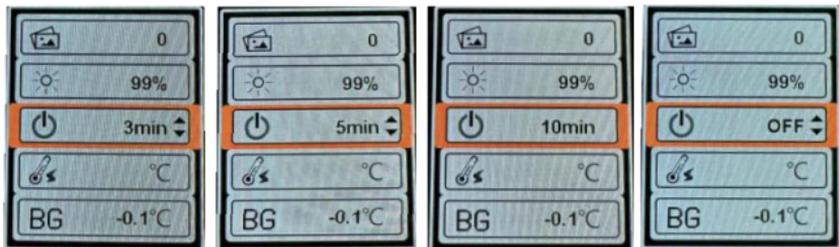
8.Secondary menu description

8.1 Backlight Settings



Select the screen brightness setting, as shown in the above figure. Press the "MODE" key to confirm, and press the "▲" key or the "▼" key to set the brightness of the screen at 1%~100%. The default value is 80%. The bigger the value, the brighter the screen. Select the appropriate brightness, press the "power" button to save and return to the menu.

8.2 timing automatic shutdown

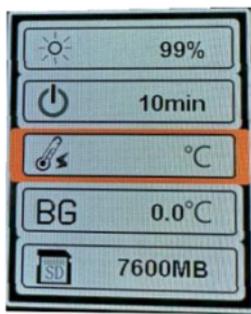
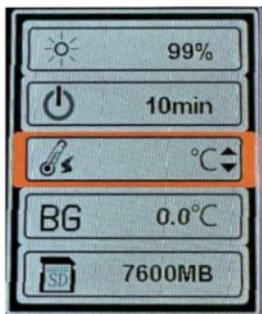


Select Timed Auto Shutdown, as shown in the figure above. Press "MODE" to confirm, press "▲" or "▼" to set, the default value is off, press "Power" to save and return to the main menu.

Four modes can be set:

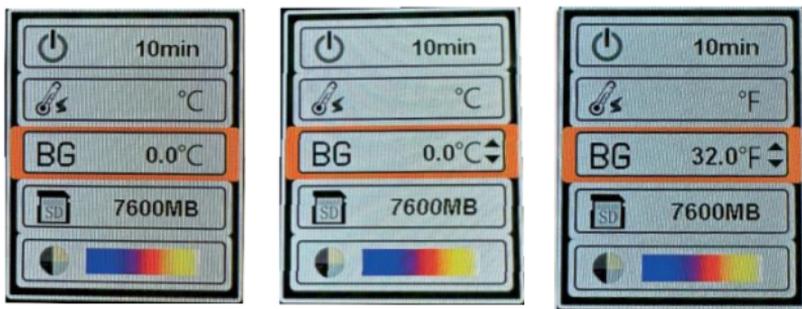
- 1) OFF: None timed shutdown
- 2) 3MIN: Turn off after 3 minutes without operating the instrument.
- 3) 5MIN: Turn off after 5 minutes without operating the instrument.
- 4) 10MIN: Turn off in 10 minutes without operating the instrument.

8.3 Temperature Settings



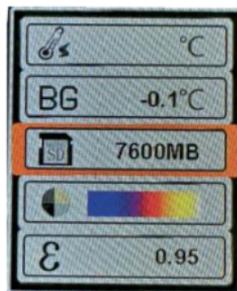
Select the temperature unit setting, as shown in the figure above. Press the "MODE" key to confirm, press the "▲" key or the "▼" key to set the Celsius °C and Fahrenheit. The default value is Celsius °C. Press the "Power" key to save and return to the main menu

8.4 Background temperature compensation setting



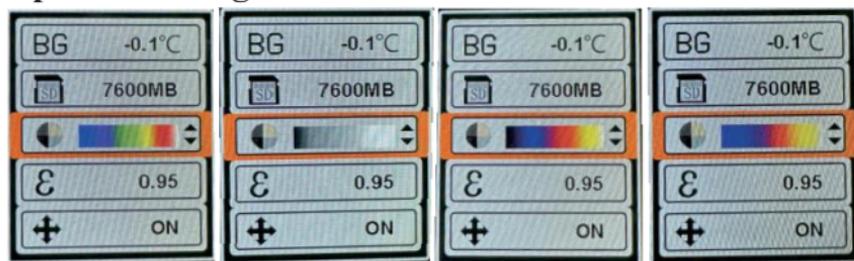
Select the background temperature compensation setting, as shown in the figure above. Press the "MODE" key to confirm, press the "▲" key or the "▼" key to set . the background temperature compensation range -25.0 °C~ 25.0 °C is optional, and the default value is 0 °C without temperature compensation. Press the "Power" key to save and return to the main menu

8.5 Memory card capacity display



The Memory Card Capacity option displays only the remaining capacity of the existing memory card, as shown in the figure.

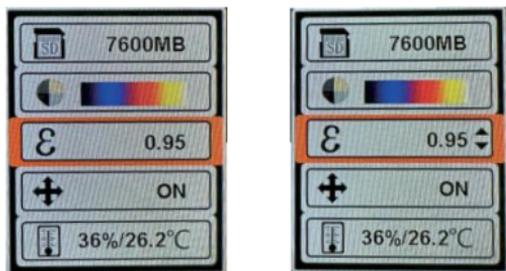
8.6 palette setting



Select the palette settings, as shown in the above figure.

Press "MODE" to confirm, press "▲" or "▼" to set. The default value is rainbow color. Press "Power" to save and return to the main menu. The palette has four modes: rainbow color, white hot color, iron red 1, iron red 2.

8.7 Emissivity setting

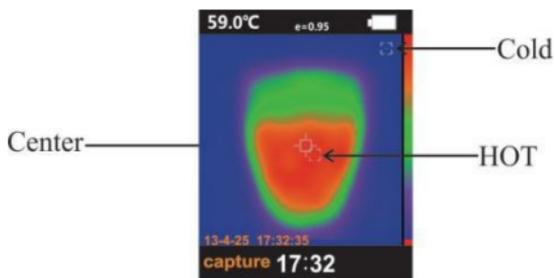
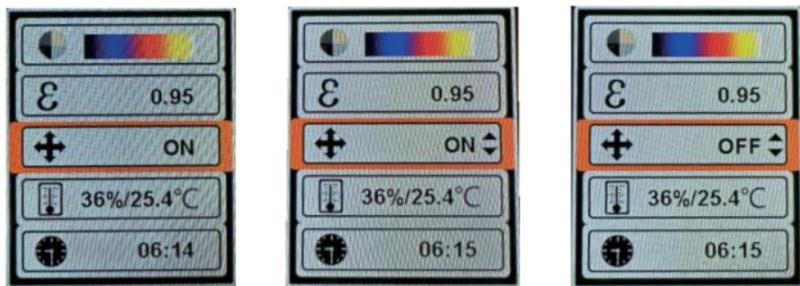


Select the emissivity setting, as shown in the figure above.

Press "MODE" to confirm, press "▲" or "▼" to set. The emissivity range is 0.00~1.00, and the default value is 0.95.

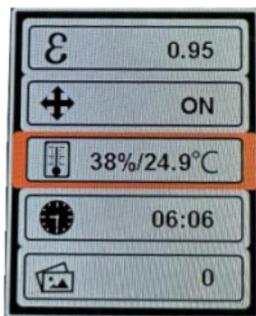
Press "Power" to save and return to the main menu.

8.8 MAX/MIN point temperature mark setting



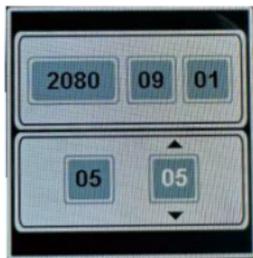
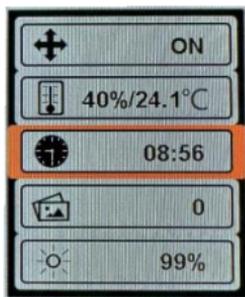
Select MAX/MIN point temperature mark setting, as shown in the figure above. Press the "MODE" key to confirm, press the "▲" key or the "▼"key to set, the default value is on, press the "Power"key to save and return to the main menu

8.9 Ambient humidity/temperature display (only IR893 is supported)



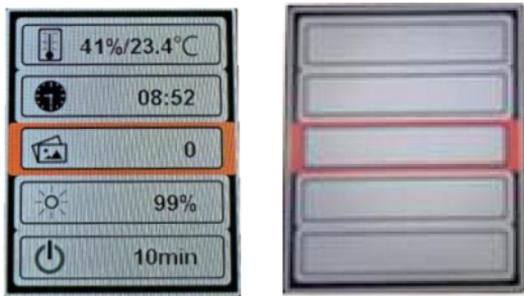
The "Ambient Humidity/Temperature Display" option is the real-time ambient humidity and temperature, as shown in the figure.

8.10 Date Time Setting



Select the date and time settings, as shown in the figure above. Press "MODE" to confirm, enter the year setting, and press "▲" or "▼" to adjust; Press the "MODE" key to switch to the month setting, and press the "▲" key or the "▼" key to adjust; Press "MODE" to switch to date setting, and press "▲" or "▼" to adjust; Press "MODE" key to switch to time setting, and press "▲" key or "▼" key to adjust; Press "MODE" to switch to minute setting, and press "▲" or "▼" to adjust. Press the "Power" key to save the time settings in this interface and exit to return to the main menu

8.11 Storage Image



Select Save Image, as shown in the above figure. Press the "MODE" key to confirm, enter the image list, view the

image taken before, press the "▲" key or the "▼" key to select the corresponding image, press the "MODE" key to view the image, and then press the "▲" key or the "▼" key to switch the image. Press the "Power" key to exit and return to the image list interface, and then press the "Power" key to return to the main menu.

9.Attention

All objects radiate infrared energy, which is based on the actual surface temperature and surface radiation coefficient of the object. The product perceives the infrared energy on the surface of the object and uses the data to calculate the estimated temperature. many common objects and materials (such as painted metal, wood, water, skin and fabric) can radiate energy effectively, so it is easy to obtain relatively accurate measurements. for the surface which is easy to radiate energy (high radiation coefficient), the radiation coefficient is greater than 90% (0.90). this simplification does not apply to glossy surfaces or painted metals because their radiation coefficients are

less than 60% (0.60). these materials are not easy to radiate energy and are classified as low radiation coefficient materials. In order to measure the material with lower radiation coefficient more accurately, it is necessary to correct the radiation coefficient. adjusting the radiation value usually enables the product to calculate the actual temperature more accurately.

10. Emissivity Value of Common Material

Material	Emissivity	Material	Emissivity
Aluminum	0.30	Glass	0.90 to 0.95
Bitumen	0.90~ 0.98	Iron Oxides	0.78 to 0.82
Concrete	0.95	Paint	0.80 to 0.95
Asbestos	0.95	Plastic Cement	0.85 to 0.95
Ceramics	0.90~ 0.95	Paper	0.70 to 0.94
Brass	0.50	Sand	0.90
Brick	0.90	Rubber	0.95
Carbon	0.85	Wood	0.94
Oil Sludge	0.94	Textile	0.94
Frozen Food	0.90	Lead	0.50

Hot Food	0.93	Marble	0.94
Ice	0.96~ 0.98	Cloth (Black)	0.98
Snow	0.83	Gypsum	0.8 0 to 0.90
Human Skin	0.98	Water	0.92 ~ 0.96

