



THERMAL IMAGING CAMERA

MODEL NO: **VS912**

Thank you for purchasing a Sealey product. Manufactured to a high standard, this product will, if used according to these instructions, and properly maintained, give you years of trouble free performance.

IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.



Refer to
Instruction
Manual



Hot surfaces

1. SAFETY

1.1. General Safety

- ☐ **WARNING!** Ensure that Health & Safety, local authority and general workshop practice regulations are adhered to when using this equipment.
- ✓ Familiarise yourself with the applications, limitations, and potential hazards of the Thermal Camera.
- ✓ Keep the Thermal Camera clean and in good condition.
- ✓ Protect the Thermal Camera from the following:
 - ✓ - Thermal shock caused by large and/or rapid ambient temperature change.
 - ✓ - High temperatures.
- ✗ **DO NOT** get the Thermal Camera wet or use in damp or wet locations or areas where there is condensation.
- ✗ **DO NOT** use the Thermal Camera for any purpose other than that for which it is designed.
- ✗ **DO NOT** allow untrained persons (particularly children) to operate the Thermal Camera.
- ✗ **DO NOT** operate the Thermal Camera when you are tired or under the influence of alcohol, drugs or intoxicating medication.
- ☐ **WARNING!** The warnings, cautions and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood that common sense and caution are factors which cannot be built into this product, but must be applied by the operator.

2. INTRODUCTION

Combines the function of surface temperature measurement and real-time thermal imaging. Features a traditional image camera to pinpoint test area with the ability to mix the thermal image over the top at varying intensities. Includes on-screen cursor to accurately locate temperature hotspots. Suitable for many industries including automotive, construction and electrical.

3. SPECIFICATION

Model No..... VS912
Focal Distance 50cm(min20cm, max 1m
Temperature Range-20°C to 300°C(±2°C)
Field of Vision65°
Screen Size..... 52mm
Resolution of Infrared Image.....60x60 (3600 Pixels)
Resolution of Camera Image.....0.3 Mega Pixels
Colour Palette.....Iron Red, Rainbow, Rainbow High contrast, Gray
Emissivity0.1 to 1.0 Adjustable
Image Mix (Camera to Thermal)..0%, 30%, 60%, 80%, 100%
Power Source 4xAA (supplied)
Battery Life..... 6hr
Power Source 4xAA (supplied)
Memory Mini SD Card (25,000 Images max)



4. OPERATION

4.1. Install Batteries

4.1.1. Install the four batteries into the Thermal Imaging Camera (fig.1) ensuring the correct polarity.

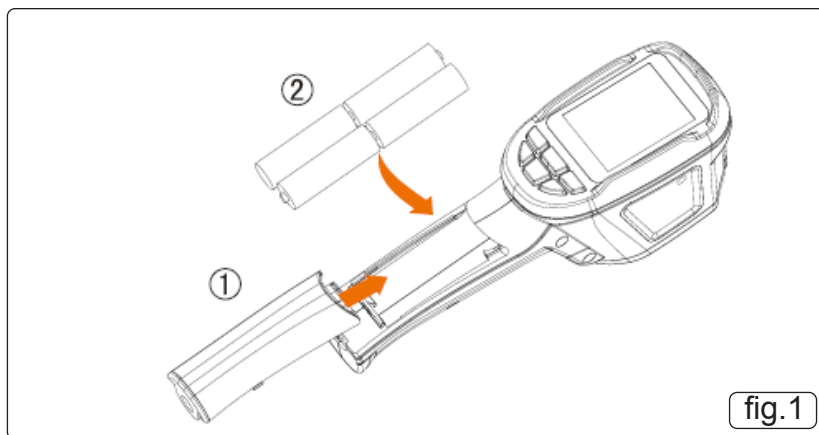


fig.1

4.2. Basic Functions

4.2.1. Press "start-up" key for 5 seconds and the instrument starts up.

4.2.2. Press "menu" key for 1 second to enter basic settings menu, five options will be shown on the screen

4.2.3. Press up or down key to scroll the menu.

4.2.4. Press "select" key to select option within yellow option box.

4.2.5. To edit the selected option press "up" or "down" key After adjustment, confirm the new value by pressing "menu" key to exit the edit mode.

4.2.6. To turn camera off press start up key for 5 seconds.

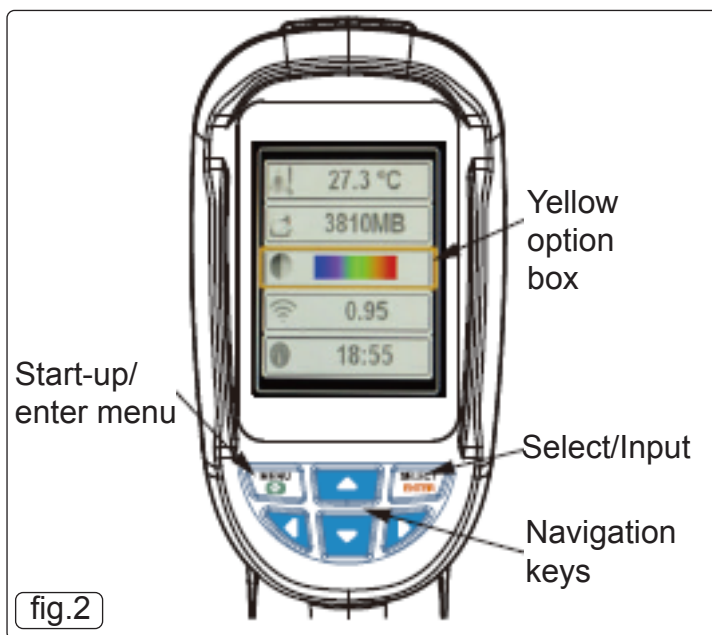


fig.2

Icon	Description
	12:12 Time Setting
	5000 Save Image
	50% Background light setting
	°C Temperature unit setting
	25°C Background temperature setting
	11088MB Capacity of memory card
	 Colour palette setting
	0.95 Emissivity setting
	ON Marking of spot temperature
	BG Background temperature

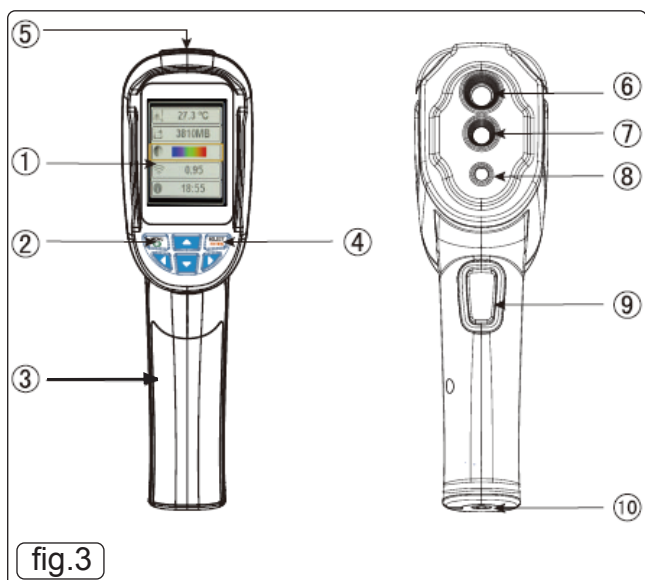
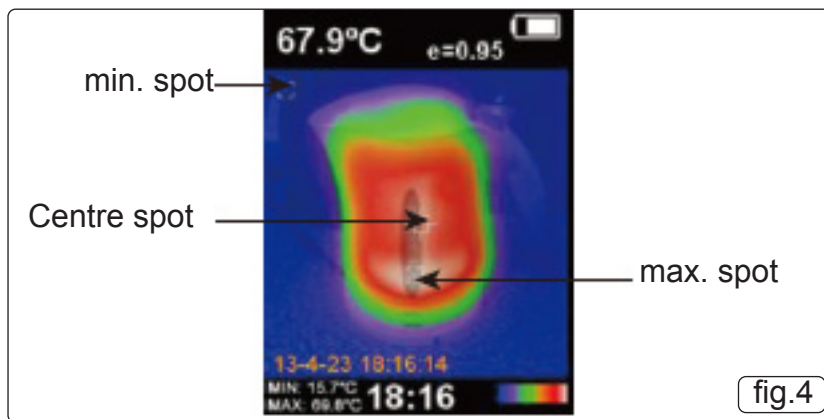


fig.3

Item	Description
1	TFT high definition colour screen
2	Start-up / menu key
3	Battery cover
4	Select / enter key
5	Small SD card
6	Infrared imaging
7	Visible light camera
8	LED
9	Image capturing
10	Interface for the installation of tripod

4.3. Measurement

- 4.3.1. The measured temperature of the centre of pixel is displayed in the upper left corner of display screen. (fig.4)
- 4.3.2. The setting of the radiation coefficient is also displayed in the upper right corner of display screen.
- 4.3.3. Move the product until the hot spot or cold spot coincides with the centre of the screen.
- 4.3.4. Move the product to the object whose temperature is higher or lower than the surrounding temperature to get the optimum results.



4.4. Focal Distance

- 4.4.1. The Thermal Imaging Camera has a focal distance fixed at 50cm (20in.)

4.5. Back light Setting

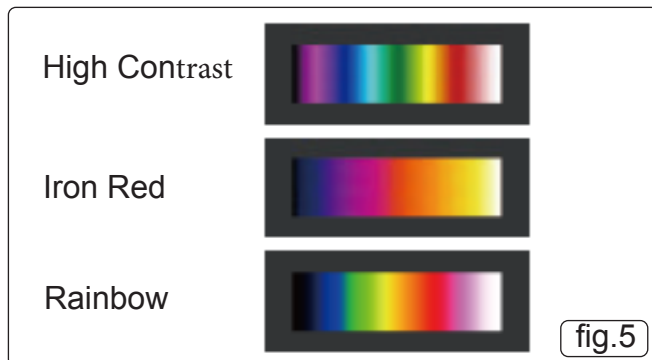
- 4.5.1. Enter the menu mode, press the "Select" key to choose the back light menu, then press the up and down key to adjust the brightness, the default brightness is 50%.

4.6. LED light

- 4.6.1. Press "Image capturing" key for 5 seconds to turn on LED light to work with the visible camera.

4.7. Colour Palette

- 4.7.1. "Colour Palette" menu can change the fake colour of the infrared image displayed on the screen or capture (fig.5.)
- 4.7.2. A series of colour palettes are available, some being more suitable for certain applications.
- 4.7.3. Gray scale palette provides balanced linear colour, this can help to reveal details.
- 4.7.4. High contrast palette emphasises the displayed colour, this is more applicable to hot / cold contrast situations. It helps to improve the colour contrast between hot and cold temperatures.
- 4.7.5. Iron red and Rainbow palettes provide a mixed high contrast Gray scale palette.



4.8. Temperature of reflective Background

- 4.8.1. The background temperature can be set between 0°C and +36°C.
- 4.8.2. Set the temperature compensation for reflective background in the option "background"
- 4.8.3. Too hot or too cold objects may influence the object or the surface temperature and therefore influence measurement accuracy.
- 4.8.4. When the radiation coefficient of the surface of the measured object is low, this phenomenon is obvious. Under many situations, adjust the temperature of reflective background to get the optimum measured results.

4.9. Marking of Spot Temperature

- 4.9.1. Press the menu button to enter the menu mode, then press the up or down key to choose the point temperature tag menu.
- 4.9.2. Press the select key and then press the up key to open and close the point temperature tag.
- 4.9.3. If turned on the marking spots indicate the hot / cold spots on the screen.

4.10. Unit of Temperature

- 4.10.1. The product displays the temperature in units of °C or °F.

4.11. Image Mixing

- 4.11.1. The mixed image makes the understanding of infrared image becomes easier.(fig.6)
- 4.11.2. The camera can capture the visible image of each infrared image to accurately display the temperature distribution of the target area.
- 4.11.3. This feature can help with sharing of the information.
- 4.11.4. To use this mixing function, press "left" or "right" key to adjust the mixed image from 0% to 100%.

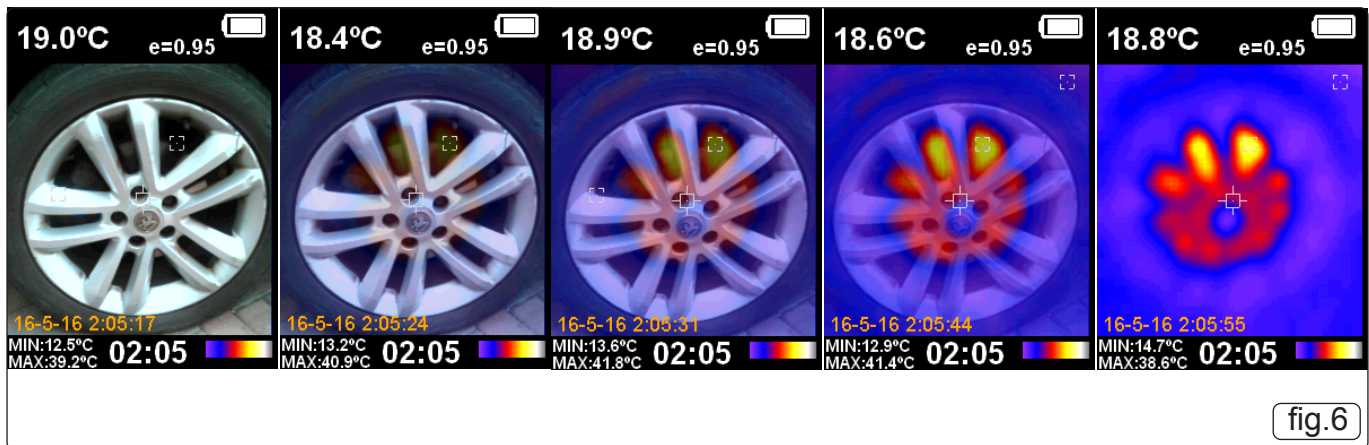


fig.6

4.12. Time Setting

- 4.12.1. In the clock menu, you can set the time and date.(fig.7)
- 4.12.2. Press “menu2 key to select menu.
- 4.12.3. Press “Up” or “Down” key to scroll through menu, select clock menu by pressing select.
- 4.12.4. Press “left” or “right” key to select time parameter to be changed.
- 4.12.5. Change value by pressing “up” or “down” key.
- 4.12.6. After setting, press “menu” key to exit.

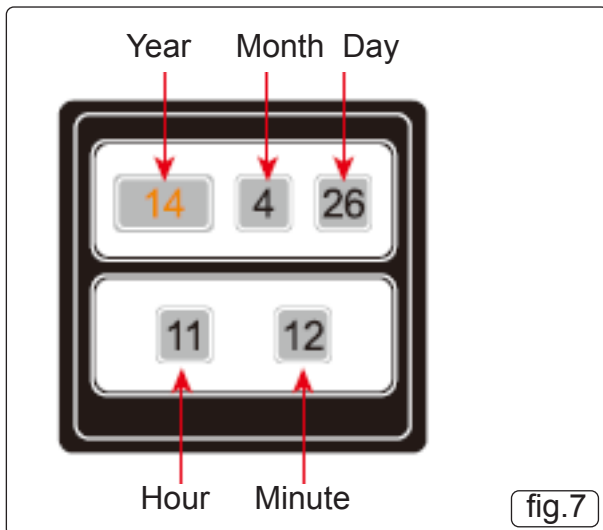


fig.7

4.13. Image Capture and Storage

- 4.13.1. The camera can store up to 25,000 images on the micro SD card.
- 4.13.2. Press image capturing button screen will display “store photo yes or no” Press “menu” key to save photo, press “select” key to delete captured image.
- 4.13.3. If “No SD” is displayed in lower left corner of screen this means SD card is missing.
- 4.13.4. If “Full” is displayed at the lower left corner of screen, it indicates that SD card is full.

4.14. Check Internal Storage

- 4.14.1. Press “menu” key to enter menu.
- 4.14.2. Select image storage by using “up” or “down” key.
- 4.14.3. Press “Select” Key.
- 4.14.4. Scroll up or down using the “up” or “down” keys to select required image.
- 4.14.5. Press “select” key to view the image.
- 4.14.6. Press “up” key and the screen will display “Delete photo yes no”
- 4.14.7. Press “menu” key to delete image or “select” key to keep image.
- 4.14.8. Press “menu” button to exit

5. NOTES

- 5.1. All objects radiate infrared energy. The radiated quantity of infrared energy is based on the actual temperature and radiation coefficient of the surface. The camera can sense the infrared energy on the objects surface and estimate the temperature based on the amount of energy detected. Many objects (eg. metal, wood, water and skin) can easily radiate energy, it has a high radiation coefficient (greater than 90%), so it is easy to get an accurate measured value. This method is not suitable to a glossy surface or coated metal as there radiation coefficient is less than 60%. To accurately measure the low radiation coefficient materials. Calculate the radiation coefficient and adjust camera accordingly to make readings more accurate.
- 5.2. **Emissivity**
 - 5.2.1. Press “menu” key select Emissivity by scrolling up or down and pressing “select” key.
 - 5.2.2. The default value is 0.95 this can be altered by using the “up” and “down” keys.

5.2.3. To know the emissivity of the surface of the object will give a more accurate temperature reading.

5.3. Emissivity of normal materials

Material	Thermal Radiation	Material	Thermal Radiation
Asphalt	0.90-0.98	Black Cloth	0.98
Concrete	0.94	Human Skin	0.98
Cement	0.96	Bubble	0.75-0.80
Sand	0.9	Charcoal Dust	0.96
Soil	0.92-0.96	Paint	0.80-0.95
Water	0.92-0.96	Matt Paint	0.97
Ice	0.96-0.98	Black Rubber	0.94
Snow	0.83	Plastic	0.85-0.95
Glass	0.90-0.95	Wood	0.90
Ceramic	0.90-0.94	Paper	0.70-0.94
Marble	0.94	Chromic Oxide	0.81
Gypsum	0.80-0.90	Copper Oxide	0.78
Mortar	0.89-0.91	Ferric Oxide	0.78-0.82
Brick	0.93-0.96	Texture	0.90

6. MAINTENANCE

Use a damp cloth to clean the outer casing. Do Not use abrasive compound or any form of solvent to clean the case , screen or lens.



ENVIRONMENT PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.



BATTERY REMOVAL

Under the Waste Batteries and Accumulators Regulations 2009, Jack Sealey Ltd are required to inform potential purchasers of products containing batteries (as defined within these regulations), that they are registered with Valpak's registered compliance scheme. Jack Sealey Ltd Batteries Producer Registration Number (BPRN) is BPRN00705.



WEEE REGULATIONS

Dispose of this product at the end of its working life in compliance with the EU Directive on Waste Electrical and Electronic Equipment (WEEE). When the product is no longer required, it must be disposed of in an environmentally protective way. Contact your local solid waste authority for recycling information.

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