AUTO TEST
Products Pty Ltd®

User Manual
May 2026

AUTO*Test*® InfraRed Camera

Hand Held Infrared Thermal Imager

AUTO TEST
Products Pty Ltd®

E7474 CE UK CA RoHS COMPLIANT 2002 / 95 / EC

DECLARATION OF CONFORMITY
We, AutoTest Products Pty Ltd. declare under our sole responsibility that the product AutoTest ® InfraRed Camera is in conformity with the provisions of the following Council Directive: 1999/5/EC.
For a copy of the Declaration of Conformity, please contact sales@autotest.net.au or refer to the document found in your product packaging.

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FOR YOUR SAFETY

Read these simple guidelines. Not following them may be dangerous. Read the complete user guide. Further detailed information is given in this manual.

SWITCH ON SAFELY
Do not switch the device on when wireless device use is prohibited or when it may cause interference or danger.

FOLLOW INSTRUCTIONS
To ensure accurate results and safety, please use this product in accordance with the user manual, otherwise warranty may not be provided if the product is damaged.

USE SENSIBLY
Use only in the positions as explained in the product documentation.

CLEAN AFTER USE
Clean the housing using a damp cloth or a mild soap solution. Avoid the use of abrasives, alcohol, or solvents when cleaning the instrument.

FLAMMABLE ENVIRONMENTS
Please do not use this product in flammable, explosive, humid or corrosive environments.

DAMAGE
To prevent inaccurate measurements, discontinue use if the product is damaged, or has been dropped.

CORRECT SETTINGS
Please use the correct emissivity to obtain accurate temperature readings

QUALIFIED SERVICE
Only qualified personnel may install or repair this product.

ACCESSORIES AND BATTERIES
Use only approved accessories and batteries. Do not connect incompatible products.

WATER-RESISTANCE
Your device is not water-resistant. Keep it dry.

CONNECTING TO OTHER DEVICES
When connecting to any other device, read its user guide for detailed safety instructions. Do not connect incompatible products.

WARM UP BEFORE USE
To ensure the measurement accuracy, please warm up the device for 10 minutes before measuring if the product has not been used for a long time.

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1 SCOPE

This manual provides an instructional guide for use of the product and defines the operational parameters, compliance frameworks, and training requirements for the installation and use of the infrared camera system.
Please refer to section 3.2 for all applicable standards.

1.1 Device Purpose & Technology

The device utilises high-precision infrared technology to provide a non-contact measurement of surface temperature. It is specifically designed to monitor thermal profiles of electric vehicles.

1.2 Regulatory Compliance & Standards

Operation and deployment of this product strictly complies with all relevant Victorian Department of Transport and Planning guidelines:

- This infrared camera strictly complies with the mandatory equipment requirements outlined in Appendix 5 of the Licensed Vehicle Tester (LVT) Licence Conditions.
- In direct alignment with Victorian Department of Transport and Planning standards for the EV Category, this camera is certified to accurately detect, measure, and record surface temperatures across a minimum range of 20°C to 400°C.

1.3 Personnel Training Frameworks

To ensure safety and compliance with Victorian vehicle inspection standards, only authorised personnel who meet the following training criteria are permitted to operate this equipment for the purposes of testing and inspecting electric and hybrid vehicles:

- EV Safety Prerequisites: Completion of nationally accredited training in vehicle depowering and reinitialisation (AURETH101 or AURETH011).
- LVT EV Accreditation: Successful completion of the mandated LVT EV Awareness training via an approved Registered Training Organisation (RTO).

2 UNPACKING AND FIRST TIME USE

Congratulations on your choice of the Auto*Test*® *InfraRed Camera*. Please take the time to read this User's Manual before using the InfraRed Camera in the field. Incorrect or inappropriate use of this instrument may void the warranty. Retain the packing materials for future shipping and transport of the unit for periodic calibration.

The packing box containing your Auto*Test*® InfraRed Camera contains:

Auto*Test*® InfraRed Camera

USB-C to USB-A Lead

QR Code Information Card

Hand strap

Screwdriver

Declaration of Conformity

3 APPLICATION INFORMATION

3.1 Application

The Auto*Test*® InfraRed Camera is a handheld, dual-camera infrared thermal imaging instrument designed for inspection, maintenance, and fault-finding applications. It incorporates both an infrared thermal sensor and a visible light camera, enabling accurate identification and localisation of temperature-related faults.
The device features a 3.5-inch high-resolution LCD display, providing a wide field of view for efficient inspection of large areas. User-adjustable emissivity settings allow the camera to be optimised for different surface materials, improving temperature measurement accuracy.
Thermal and visible images can be captured and stored internally, then easily transferred via USB-C connection or SD Card for analysis, reporting, and maintenance records. The camera is powered by a built-in 5000 mAh lithium

battery, offering extended operating time and convenient recharging through a USB-C interface.
The Auto*Test*® InfraRed Camera supports automatic hot-spot and cold-spot tracking, real-time maximum and minimum temperature locking, and configurable high and low temperature alarms. These functions provide reliable, real-time temperature data to support a wide range of diagnostic and monitoring tasks.
For operation in low-light environments, the device includes an integrated 3 watt white LED working light, improving visibility and operator safety during inspections.
With an IP65 protection rating, the camera is resistant to dust ingress and moisture, making it suitable for use in harsh industrial and outdoor environments.

3.2 Applicable standards

The Auto*Test*® InfraRed Camera is designed in accordance with applicable international safety standards, electromagnetic compatibility standards, and infrared thermography standards. Compliance with these standards ensures reliable performance, measurement accuracy, and safe operation when used as specified.

The instrument is designed with reference to internationally recognised standards including:

IEC 61010-1
Safety requirements for electrical equipment for measurement, control, and laboratory use
IEC 61326-1
Electrical equipment for measurement, control and laboratory use – EMC requirements
IEC 61000-6-2
Generic immunity standard – Industrial environments

- **IEC 61000-6-4**
  Generic emission standard – Industrial environments
- **AS ISO 10880:2017**
  Non-destructive testing — Infrared thermographic testing — General principles

- **AS ISO 18434-1**
  Condition monitoring and diagnostics of machines — Thermography — General procedures

European Union (EU) Applicable Directives

- **2014/30/EU – EMC Directive**
  ISO 18251-2:2023
  Infrared thermography — Performance testing of equipment

4 GETTING STARTED

4.1 Button/Function Description

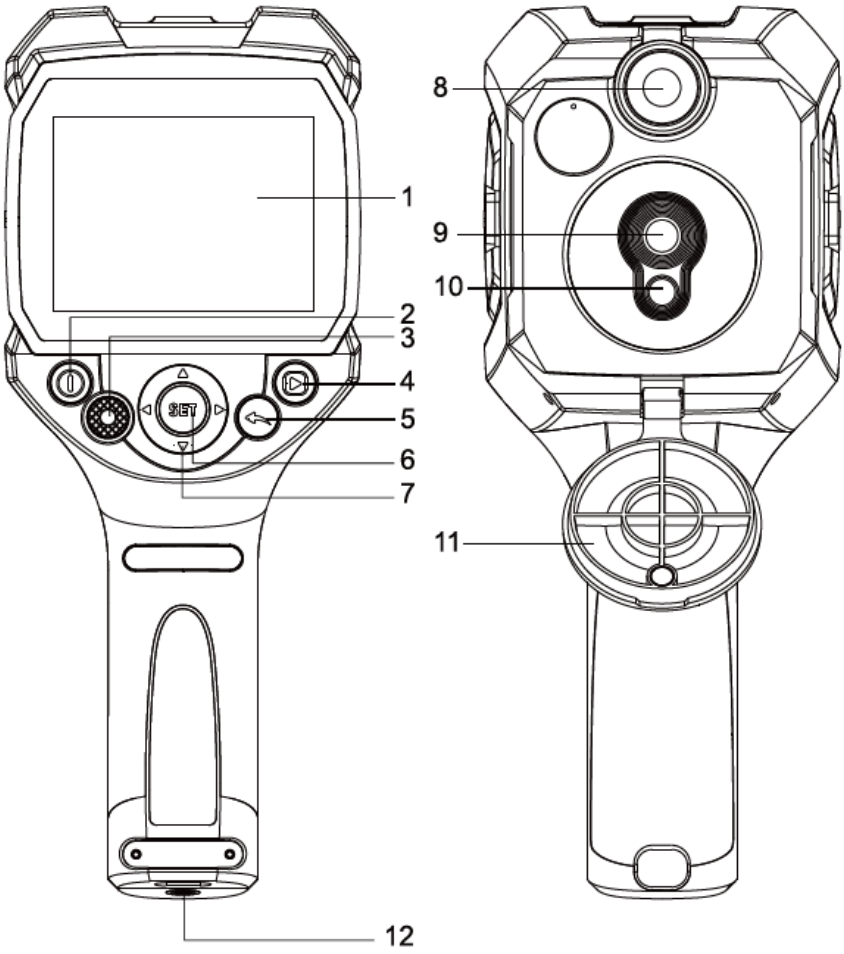
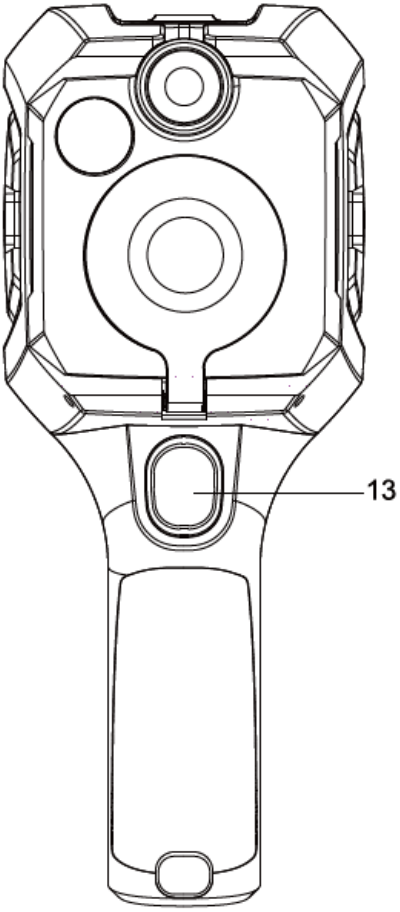


Figure 1. Button locations



1. **LCD Screen**
2. **On/Off button**
3. **LED Light Button**
   Short press to turn on, short press again to increase brightness or turn off.
4. **Picture Memory Button** Short Press to enter picture memory, press the **SET** button to delete all or one picture.
5. **Return**
   Short press to return.
6. **SET** Button
   Short press to enter settings menu.
7. **Up/Down/Left/Right/Button**
   To select options, move cursor and view records
8. **Led Light**
9. **Infrared Camera**
10. **Visible Light Camera**
11. **Camera Cover**
12. **Tripod Screw Hole**
13. **Picture Snap button**
    Short Press to take picture and save.

Figure 2. Button locations cont.

4.2 Main Screen Feature Descriptions

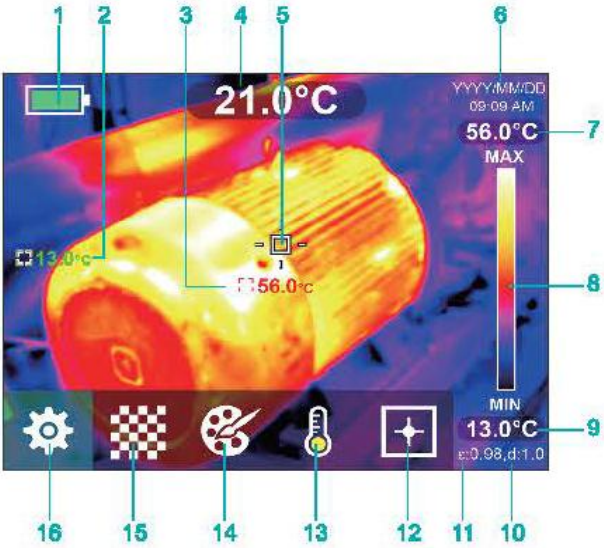


Figure 3. Main Screen function descriptions

1. Battery status
2. Minimum temperature and position in current view
3. Maximum temperature and position in current view
4. Centre point temperature
5. Centre point temperature marker
6. Current date and time
7. Maximum temperature of Colour Bar
8. Colour Bar
9. Minimum temperature of Colour Bar
10. Current detection distance
11. Current emissivity
12. Marker option – standard or hottest temperature point
13. Celsius or Fahrenheit options
14. Palette options select
15. IR and visible light display options
16. Settings menu

Press the **SET** button, and then use the ◄ / ► on the scroll ring to select a function through the main screen menu.

Left to right, they are Settings Menu, IR and Visible Light Display, Colour Palette, Temperature or Marker option.

Once a mode is highlighted, Press **SET** to choose a function within that mode. Use the ▲/▼ on the scroll ring to highlight the desired option and click the **SET** button to select. Press the ↩ button to leave that menu.

Marker Options

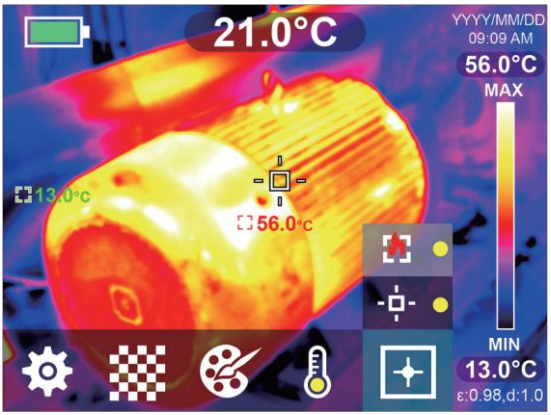


Figure 4. Display cursor options

Temperature Options

Press ▲/▼ button to switch between °C and °F.

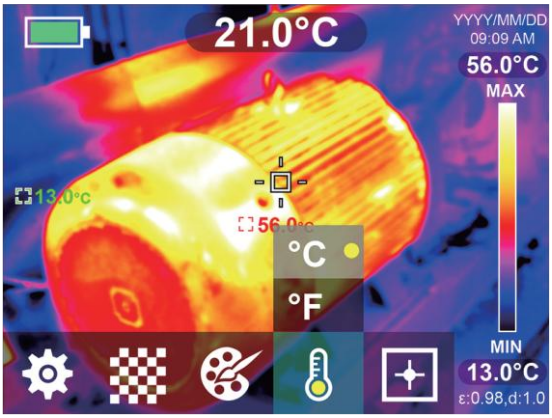


Figure 5. Display temperature options

Palette Options

Press ▲/▼ button to switch between the six colour palette modes.

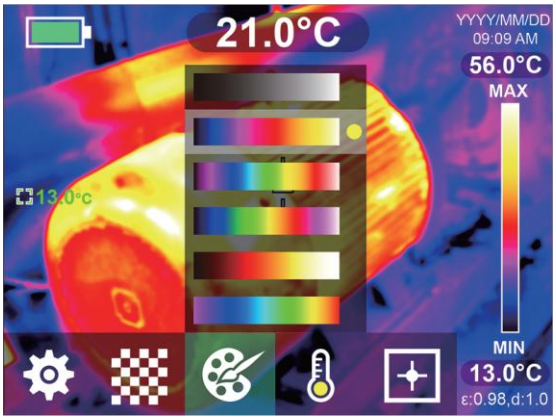


Figure 6. Display palette options

Six colours and imaging modes

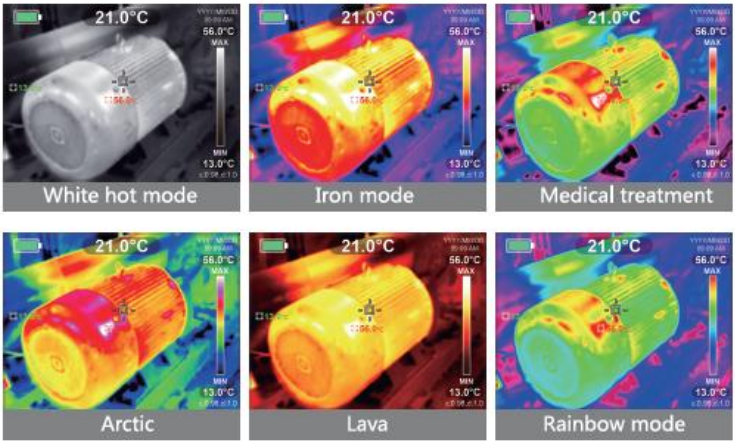


Figure 7. Display palette mode options

Infrared and visible light ratio options

You can choose between 0% (visible light View), 25% (25% IR Light View), 50% (50% IR Light View), 75%(75% IR light View), 100% (all IR view).

Figure 8. Display light ratio options

4.3 Settings Menu

The first setting on the Main Screen is the Settings wheel. Here, you can access all other functions.
Firstly, enter the Settings Menu from the main screen. Then all options will follow:

I. Press ▲/▼ button to switch between the menu options. Press **SET** button to enter the setting interface.
II. Press ↩ button to return to the main Settings menu.

4.3.1 *Emissivity settings*

Selecting the correct emissivity is very important for the accuracy of temperature measurements, as emissivity has a significant impact on the measured surface temperature.

With the Emissivity icon highlighted, Press the **SET** button so the value turns blue, press the ▲/▼ button to adjust the emissivity value. After setting the value is completed, press the ↩ button to return to the main setting menu.

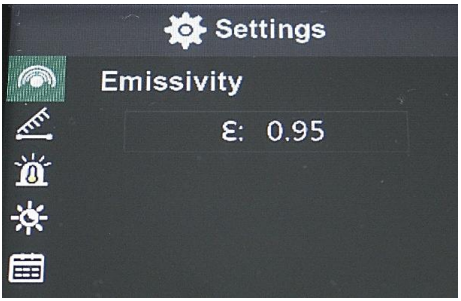


Figure 9. Emissivity settings

Tip: The emissivity can be set in the range of 0.01-0.99. For the emissivity of common objects, please refer to the following table.

4.3.1.1 Emissivity of common objects

Material	Emissivity	Material	Emissivity
Wood	0.85	Black paper	0.86
Water	0.96	Polycarbonate	0.80
Brick	0.75	Concrete	0.97
Stainless steel	0.14	Copper oxide	0.78
Adhesive tape	0.96	Cast iron	0.81
Aluminium plate	0.09	Rust	0.80
Copper plate	0.06	Gypsum	0.75
Black aluminium	0.95	Paint	0.9
Human skin	0.98	Rubber	0.95
Asphalt	0.96	Soil	0.93
PVC plastic	0.93		

4.3.2 *Setting the Distance*

Setting the correct distance before detecting an object will ensure a more accurate temperature measurement.

With the Distance icon highlighted, press the SET button so the value turns blue. Press the ▲/▼ button to set the distance value (0.5-1.2 m). After setting distance is complete, press the ↩ button to return.

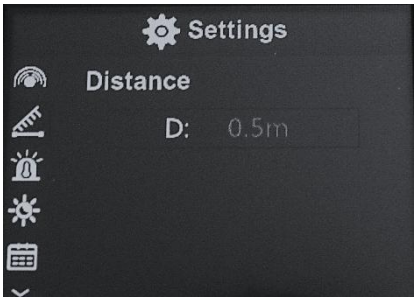


Figure 10. Display distance setting

4.3.3 *Setting the HI/LO Alarm temperature*

With the Alarm icon highlighted, press the **SET** button so the values turn blue. Use the ▲/▼ buttons to adjust the values, or Press **SET** to move to the next item. Then press the ↩ button to the leave the menu

High temperature range: -19 °C ~ 400 °C
Low temperature range: -20 °C ~ 399°C

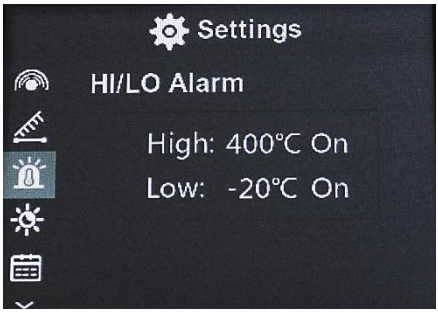


Figure 11. Setting the temperature alarm

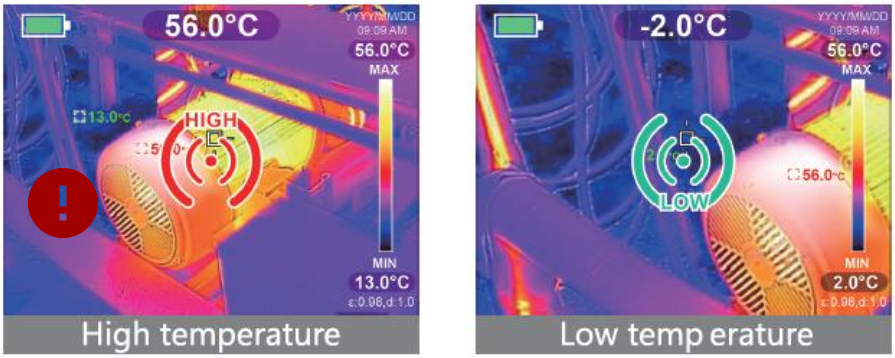


Figure 12. Temperature alarm settings

4.3.4 *Setting the display brightness*

With the Brightness icon highlighted, Press the **SET** button so the options turn blue. Use the ▲/▼ buttons to switch between Low, Mid or High brightness. Press the **SET** button to confirm, then press the ↩ button to the left main setting menu.

Figure 13. Setting the LCD brightness

4.3.5 *Setting the date and time*

With the Date & Time icon highlighted, press the **SET** button so the values turn blue. Use the ▲/▼ buttons to switch the adjust the values, or Press **SET** to move to the next item. Then press the ↩ button to the leave the menu.

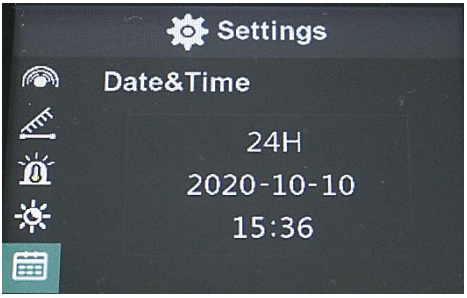


Figure 14. Date and time setting

4.3.6 *Dev Info*

A list of the Product, Version and Release date.

Figure 15. Dev information

4.3.7 *Language*

With the Language icon highlighted, press the **SET** button. Use the ▲/▼ buttons and to switch to Chinese or English and Press **SET** to select. Press the ↩ button to the leave the menu.

Figure 16. Language settings

4.3.8 *Colour Bar*

With the Colour Bar icon highlighted, press the **SET** button. Use the ▲/▼ buttons to select if the Colour Bar should appear on the Main Display Screen. Press **SET** to select, then press the ↩ button to the leave the menu.

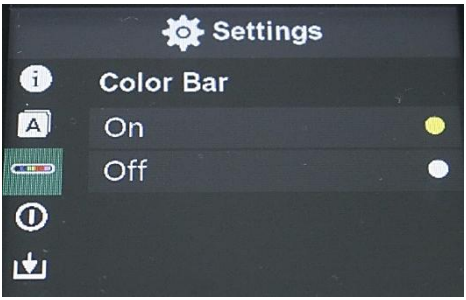


Figure 17. Colour Bar

4.3.9 *Auto Poweroff settings*

With the Poweroff icon highlighted, press the **SET** button so the values turb blue. Use the ▲/▼ buttons to switch between automatic power off options. Then press the ↩ button to the leave the menu.

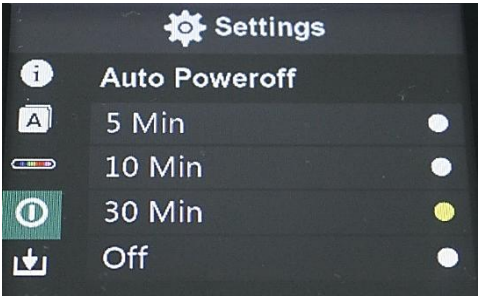


Figure 18. Setting the auto power-off time

4.3.10 *Auto Save*

With the Auto Save icon highlighted, press the **SET** button so the values turn blue. Use the ▲/▼ buttons to switch between Off or On, then press the ↩ button to the leave the menu.

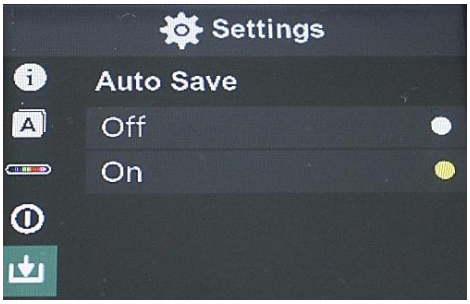


Figure 19. Setting the auto save

4.3.11 *Factory Reset*

Note! Please use the Factory Reset function carefully. All saved information in the device will be lost once reset has been confirmed.

With the Factory Reset icon highlighted, press the **SET** button, use the ▼ button to highlight the 'Yes' option. If you require a full factory reset – which will delete all saved information - Press **SET** on 'Yes'. Then press the ↩ button to the leave the menu.

Figure 20. Selecting factory reset

4.3.12 *Formatting the SD Card*

Note! Please use the Format SD Card function carefully. All the information in the SD Card will be lost once the format has been confirmed.

With the Factory Reset icon highlighted, press the **SET** button, use the ▼ button to highlight the 'Yes' option. If you require the Format SD function – which will delete all saved information on the card - Press **SET** on 'Yes'. Then press the ↩ button to the leave the menu.

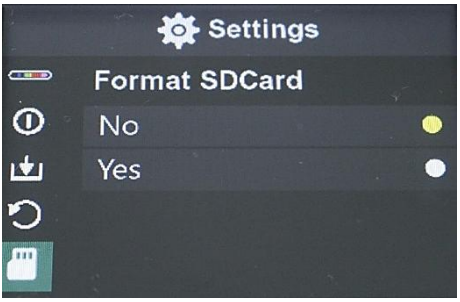


Figure 21. Formatting the SD card

4.4 Browsing images

Note! Please do not remove the SD Card while browsing images, otherwise images in SD Card may be lost.

To view saved images, press the ▶ button to open image browsing. Use the ◄ / ► buttons to scroll through the saved images.
To delete images:

- **Delete one image:** Display the image you want to remove, then press **SET**. When **One** is highlighted, press **SET** again to confirm.
- **Delete all images:** Display any saved image, then press SET and then ◄ until **All** is highlighted. Press **SET** to confirm.

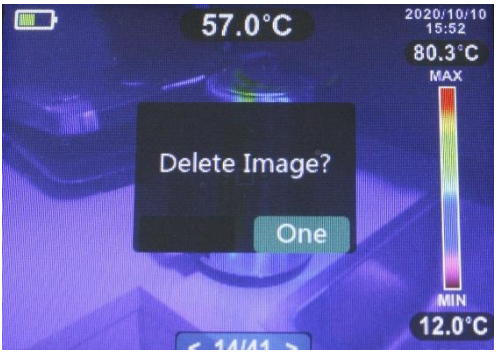


Figure 22. Browsing and deleting images

4.5 LED Light

The LED lamp may be turned on and off using the LED Button (3 on page 10)
To avoid prolonged use of the LED lamp influencing the temperature of the object being measured, the LED light will turn off automatically after 5 minutes of continuous use. If required, it can be turned on again by pressing the button again.

4.6 Charging the battery

The Imaging camera has an internal lithium battery - this battery is not user serviceable.
Gently open the cap at the top of the device to access the USB charging port, adjacent to the SD Card. Plug the USB cable in and attach to a suitable USB-A power source. The product's battery charge percentage is indicated on the top left of the Main Display Screen.

4.7 SD Card

Gently open the cap at the top of the device to access the Micro SD Card, adjacent to the USB Port. The card may be ejected by gently pushing the top of the card.

4.8 Maintenance

Do not drop or hit the instrument.
Do not disassemble the instrument as this may damage the delicate electronic circuits, causing device failure.
Do not subject the instrument to high temperatures or store the instrument in high temperature, high humidity, flammable, explosive and strong electromagnetic environments.
Clean the instrument with a soft cloth using a small amount of water or neutral detergent to wipe the case. Abrasives and solvents should not be used as they may create corrosion and damage the instrument.

5 SPECIFICATIONS

Thermal imaging pixels	10800 (120 x 90)
Spectral response band	8 ~ 14 um
Field of view	50° ~ 63.4°
Pixel size	17 um
Output frame rate	< 20 Hz
Thermal sensitivity	< 60 mK
Working environment temperature	0 ~ 35 °C
Temperature range	-20°C – 400 °C
Accuracy	1) -20 °C ~ 0 °C ±5 °C 2) 0 °C ~ 100 °C ± 3 °C 3) 100 °C ~ 400 °C ± 5%
Measurable distance range	0.1 m ~ 9.0 m
Colour palette	Six
High/low temperature alarm	√

SENSOR non-uniformity	<5%
Display Size	90 mm
Display resolution	320 x 240
Visible light resolution	640 x 480
Storage	External Micro-SD Card
Storage memory	SDRAM – 256 Mbit, FLASH 64 Mbit
Communication Interface	USB 2.0
Video output	Selectable
Power	lithium battery 5000 mAh
Light	High-power white LED
Protection class	IP65
Keypad	6 keys tactile silicone keypad
Operating temperature	-10 °C – 50 °C
Storage temperature	-40 °C – 70 °C
Weight	0.54 kg
Physical Dimensions	238 x 95 x 86 mm

6 SERVICE AND REPAIR

Like all electronic instrumentation, the Auto*Test*® *InfraRed Camera* must be serviced. The reason for this is to maintain creditability in tests and acceptance of data according to international standards.
For the current cost and time required for repair or service please contact Auto*Test*®.

6.1 Packaging

When sending for repair or service, the unit should be packaged in the original shipping container. However, where the container is not available, it is important to remember that you are shipping an electronic instrument. Bubble pack or foam should surround the unit and should be inserted into a sturdy cardboard box. Please ensure that the container is locked or otherwise obviously secured.

6.2 Shipping

Labelling

A label should be placed on the outside of the container noting "Electronic Device Fragile".

Freight Carrier

Container should be sent 'Freight Prepaid'. Auto*Test*® has no preference on freight carriers.
Return freight details must be included.

Addressing

Please address to

Auto*Test*® Products Pty Ltd
Att: Service Department
69 Parsons St
Kensington, VIC 3031 AUSTRALIA
Phone: +61 3 8840 3000
Email: service@autotest.com.au

7 WARRANTY

7.1 Application of these conditions

These conditions, including any written variations agreed by us, apply to all supplies made by Auto*Test*® Products Pty Ltd (the Supplier) to the purchaser identified in the relevant invoice or contract. Together with these conditions, as amended from time to time under their terms, the applicable payment terms, invoices, and purchase orders exchanged between the parties form the contract.

7.2 Inconsistencies

Where the supply purports to be made on or subject to terms and conditions other than these conditions, the Purchaser agrees that such other terms and conditions are disregarded and form no part of the Contract unless the Supplier agrees otherwise in writing.

7.3 Warranty Terms and Conditions

When you purchase an Auto*Test*® Product you are required to complete the warranty registration form and return to Auto*Test*® Products Pty Ltd within 10 days of purchase of the product.

Auto*Test*® Products or any Authorised Auto*Test*® Service Centre warrants this product against defects in material and workmanship for a period of 12 months from the original date of purchase.
This warranty applies only to products and components supplied by Auto*Test*® Products which can be identified by the trade name or logo affixed to them or by other documents.
Auto*Test*® Products does not warrant any products not supplied by Auto*Test*® Products.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law.

Subject to section 8.1 and the terms below, as your Standard Warranty Auto*Test*® agrees to repair or replace at Auto*Test* 's cost the Auto*Test*® product, and any Auto*Test*® accessory supplied with the product, purchased by you in Australia from a Auto*Test*® Authorised Dealer when the product does not perform in accordance with the manufacturer's specifications during the Warranty Term, commencing from the date of purchase. Transit insurance and return freight will be at the owner's expense.
Auto*Test*® Products or any Authorised Auto*Test*® Service Centre reserves the right to refuse warranty repair if accident, abuse, misuse or misapplication has damaged the product. In transit or as a result of service or modification by other than an Authorised Service Centre, nor are any other warranties expressed or implied, including any regarding merchantability or fitness for any other particular purpose.
Products presented for repair may be replaced by refurbished products of the same type rather than being repaired. Refurbished parts may be used to

repair the products. Replacement of the product or a part does not extend or restart the Warranty Term.
The product will be at the owner's risk whilst in transit to and from the Auto*Test*® Authorised Service Centre.
Auto*Test*® will bear the expense of transport where transported by Auto*Test*® or its Authorised representatives. Any other expense of claiming the warranty will be borne by you.
Auto*Test*® and its Authorised Service Centres may seek reimbursement of any costs incurred by them when the product is found to be in good working order.

Auto*Test*® Products or an Authorised Service Centre is not responsible for incidental or consequential damage resulting from the breach of any express or implied warranty, including damage to property and, to the extent permitted by law, damages for personal injury.
To the full extent permitted by law, but subject always to 8.1, the Standard Warranty
does not cover:

- If the product has not been installed, operated, maintained or used in accordance with the manufacturer's instructions or specifications provided with the product.
- If the factory-applied serial number has been altered or removed from the product.
- To damage, malfunction or failure resulting from alterations, accident, misuse, abuse, fire, liquid spillage, mis-adjustment of customer controls, use on an incorrect voltage, power surges and dips, thunderstorm activity, voltage supply problems, tampering or unauthorised repairs by any persons, use of defective or incompatible accessories, the operation of a computer virus of any kind, exposure to abnormally corrosive conditions or entry by any insect, vermin or foreign object in the product.
- The use of proper paper and stationery is very important to the operation of products with printers. Use of non-standard paper will jam the printer and/or wear the print head. Use of non-standard paper will void the warranty.
- Repairs attempted or made by other than our regional repair centre or authorised warranty service centre.
- To damage arising during transportation, installation or while moving the product, or to any transportation costs of the product or any parts thereof to and from the owner, unless otherwise specified in these Warranty Terms.

- Conditions or malfunctions caused by the reasonable effects of fair wear and tear or the malfunction of normally wearing parts, which include but are not limited to: batteries, plugs and leads.
- To any third-party software or hardware not contained in the product as originally configured by the manufacturer.
- To any failure, to the extent that the failure is not a failure of the product to perform in accordance with its specifications.
- To replacement or repair of any
  1) consumables (including cables), paper, ink ribbons or
  2) batteries (beyond 3 months from date of purchase), or
  3) lost parts or accessories.
- To service of any product whilst it is outside Australia.
- To any wear and tear.
- Auto*Test*® will not be liable for any loss, damage or alterations to
  1) third party hardware or software.

  or
  2) programs, data or information stored on any media or any part of the product, no matter how occurring.

  or
  3) for any loss or damage arising from loss of use, loss of profits or revenue, or for any resulting indirect or consequential loss or damage.
- Modified, abused, neglected, accidentally damaged or excessively worn products, or products that have become damaged or defective as a result of improper use.
- Auto*Test*® products that are not distributed through Auto*Test* 's authorised distributors and resellers.

(Warranty non-transferable) This warranty is not transferrable beyond the original purchaser. Warranty is subject to Auto*Test*® Products Standard Terms & Conditions published widely. For more detailed warranty clause, please visit our website www.autotest.net.au/terms-and-conditions/.

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