INFRARED LASER DIGITAL THERMOMETER (12:1)

MODEL NO: **VS900.V5**

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 instructions

Warning! Laser Beam

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.
- ❑ **WARNING! DO NOT** aim the laser beams at your or another person's or animal's eye and beware of reflections from mirrors or other shiny surfaces.
- ✓ Familiarise yourself with the applications, limitations, and potential hazards of the thermometer.
- ✓ Keep the thermometer clean and in good condition.
- ✓ Protect the thermometer from the following:
  Electro-magnetic fields from engine components, arc welders and induction heaters closer than 125mm.
  Static electricity.
  Thermal shock caused by large and/or rapid ambient temperature change.
  High temperatures.
- × **DO NOT** get the thermometer wet or use in damp or wet locations or areas where there is condensation.
- × **DO NOT** take readings through transparent materials such as glass or clear plastic. The surface temperature of these materials will be measured.
- × **DO NOT** use the thermometer in areas where there is steam, dust or smoke. These conditions will result in erroneous readings.
- × **DO NOT** use the thermometer for any purpose other than that for which it is designed.
- × **DO NOT** allow untrained persons (particularly children) to operate the thermometer.
- × **DO NOT** operate the thermometer when you are tired or under the influence of alcohol, drugs or intoxicating medication.

1.2. LASER SAFETY

The VS900 utilises a Class II laser that emits low levels of visible radiation (i.e. wavelengths between 400 and 700 nanometres) which are safe for the skin but not inherently safe for the eyes. The Class II emission limit is set at the maximum level for which eye protection is normally afforded by natural aversion responses to bright light. Accidental eye exposure is therefore normally safe, although the natural aversion response can be overridden by deliberately staring into the beam, and can also be influenced by the use of alcohol or drugs.

- ❑ **WARNING! DO NOT** look or stare into the laser beam as permanent eye damage could result.
- ✓ Be aware that reflections of the laser beam from mirrors or other shiny surfaces can be as hazardous as direct eye exposure.

2. INTRODUCTION

Detects infrared energy emissions and converts them into precise temperature measurements. Integrated laser pointer ensures accurate aiming at the measurement surface. Large 40mm LCD screen with back-lit display for low-light environments. Temperature readings are available in both °C and °F. Covers -50°C to +400°C (-58°F to +752°F) for broad application use. Features include a data-hold function and auto power-off to conserve battery life. Powered by a 9V battery (supplied). Storage pouch included. Not medical grade.

3. SPECIFICATION

Model no	VS900.V5
Accuracy	±1.5%
Focal Ratio	12:1
Nett Weight	0.21kg
Temperature Range	-50°C to +400°C (-58°F to +752°F)

4. CONTENTS

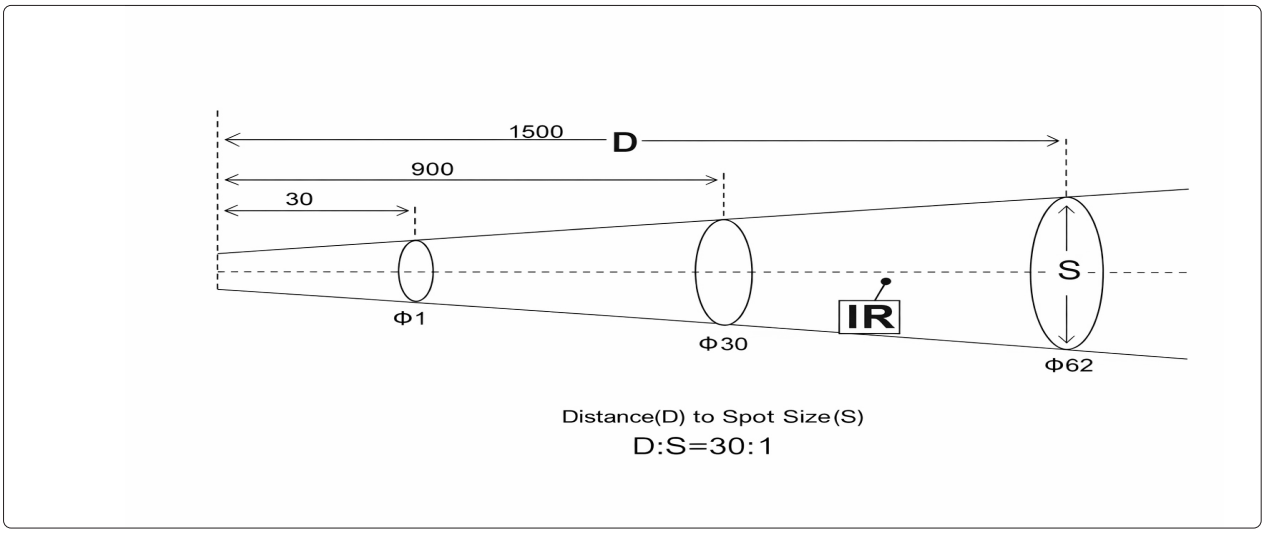
User's manual.
9V Battery.
Canvas bag

Original Language Version

Temp. range	-50ºC~400ºC -22ºC~662ºF
Accuracy	-50ºC~0ºC / -4ºF~ 32ºF±3ºC / 5.4ºF
	Above 0ºC / 32ºF ± 2% of reading ± 2ºC / 3.6ºF
Optical Resolution	D:S=12:1
Response time	<500ms
Emissivity	Adjustable from 0.1~1.0
Resolution	0.1 ºC (0.1ºF)
Spectral Respons	8~14um
Polarity Display	Auto display, "-" indicates negative, while positive with no sign.
Diode Laser	Output < 1mW,630~670nm,class 2(II)
Auto Power Off	Auto shuts off after 20 seconds inactivity
Operating Temp	0ºC to 50ºC / 32ºF to 122ºF
Storage Temp	-20ºC to 60ºC / -4ºF to 140ºF
Relative Humidity	Operating:10~95% RH,Storage:<80%RH
Power Supply	9V battery
Dimensions(L*W*H)	159×86.5×49.3mm
Note: The accuracy was measured in 18~28 degree.	

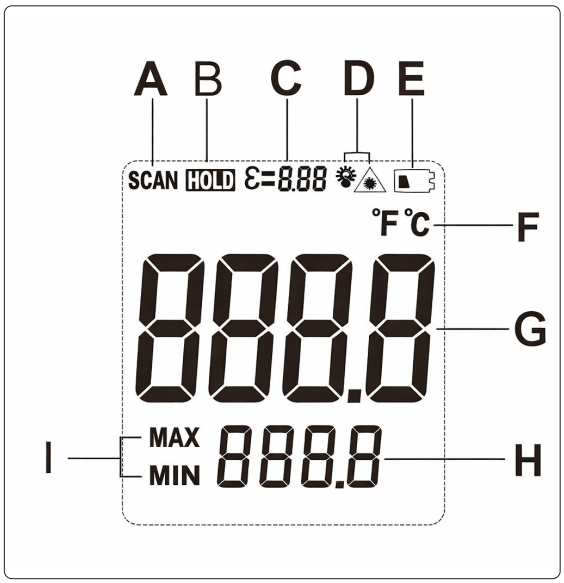
5. OPTICAL FIELD

The meter's field of view is 12:1, for example, if the meter is 30.48cm from the target spot, the diameter of the target must be at least 2.54. Other distance ratios are show below in the field of view diagram.



A	LCD Display
B	UP button
C	Laser / Backlit button
D	Down button
E	Set button
F	Wrist strap hole
G	Battery cover
H	Measurement trigger
J	IR sensor
K	Laser pointer

6. OPERATION



A	Measurement icon
B	Data hold icon
C	Emissivity icon
D	Backlit / Laser icon
E	Low battery indication
F	ºC / ºF icon
G	Current temperature value
H	Max / min record value
I	Max / min icon

6.1. OPERATING STEPS:

6.1.1. Orient the instrument by grasping the handle and directing the sensor aperture toward the target surface.

6.1.2. Depress and hold the trigger to power on the device.
When activated, the SCAN icon will illuminate, signifying that real-time temperature acquisition is in progress.

6.1.3. Observe the measured surface temperature on the LCD display, which will continuously update during active scanning.

6.1.4. Release the trigger to terminate the measurement cycle.
The device will enter data-hold mode, indicated by the HOLD icon, and the final recorded value will remain displayed for several seconds.

6.1.5. Allow the instrument to power down automatically.
The meter will execute an auto-shutdown sequence approximately 20 seconds after the trigger is released to conserve battery life.

NOTE: If the meter has been exposed to significant temperature changes, allow at least 30 minutes for it to stabilize before use.
The laser is intended solely for aiming. It may be turned off during short-range operation to conserve battery power.

6.2. BUTTON FUNCTIONS

6.2.1. SELECTION BUTTON
0ºC / 0ºF In Measurement Mode, press the ▲▼ button to toggle the temperature display between degrees Celsius (ºC) and degrees Fahrenheit (ºF).

6.3. LASER POINTER / BACKLIGHT BUTTON
In measurement mode, press the laser / backlight button to switch the display backlight ON or OFF.

6.3.1. In hold mode, press the same button to enable or disable the laser pointer.

6.4. SEL (SELECT) BUTTON
After powering on the meter, press the SEL button SEL to view the maximum (MAX) and minimum (MIN) recorded temperature values.

6.5. TO ADJUST THE EMISSIVITY SETTING:

6.5.1. After powering on the meter, press and hold the SEL key until the ε icon begins to flash on the display. Release the SEL key to enter Emissivity Adjustment Mode. Use the ▲▼ key to modify the emissivity setting as required. Once the desired value is set, press and hold the SEL key again to exit the emissivity configuration and return the device to standard measurement operation.

7. MAINTENANCE

- ✓ Clean the unit with a dry, soft cloth. Do not use solvents, alcohol, or other volatile cleaning agents.
- ✓ Store the thermometer in an environment free from high temperature and humidity.
- × **DO NOT** disassemble the device. Repairs should be performed only by qualified personnel.
- × **DO NOT** immerse the device in water or expose it to excessive moisture.

7.1. BATTERY REPLACEMENT
When the low-battery indicator appears on the display, replace the battery promptly to ensure accurate operation.
Open the battery compartment, replace the existing battery with a new 9V battery, and securely close the battery compartment cover (see section 5 diagram).

7.2. INFRARED THERMOMETER OPERATING PRINCIPLES AND GUIDELINES

7.2.1. OPERATING PRINCIPLE

7.2.2. The infrared thermometer is designed exclusively for measuring surface temperatures of objects.

7.2.3. The optical sensor emits, reflects, and transmits infrared energy. This energy is collected and focused onto a detector, where it is converted into an electronic signal and displayed as temperature on the LCD screen.

7.2.4. The integrated laser serves only as an aiming aid to help identify the target location.

7.3. FIELD OF VIEW (FOV)

7.3.1. The target surface must be larger than the measurement spot size defined by the field-of-view ratio.

7.3.2. For smaller targets, the thermometer must be positioned closer to ensure accurate measurement.

7.3.3. When high accuracy is required, the target area should be at least twice the diameter of the measurement spot.

7.4. DISTANCE-TO-SPOT SIZE RATIO (D:S)

7.4.1. As the distance (D) from the target increases, the measurement spot size (S) expands accordingly.

7.4.2. Users should maintain an appropriate distance to ensure the spot size does not exceed the target area.

7.5. LOCATING HOT SPOTS

7.5.1. To identify a temperature anomaly, aim the thermometer outside the suspected area and scan across it in a vertical and horizontal pattern.

7.5.2. Observe the readings while sweeping to pinpoint the highest temperature zone.

NOTES:

- × Measurement of shiny or polished metal surfaces (e.g., stainless steel, aluminium) is not recommended due to low emissivity and reflective properties.
- × **DO NOT** attempt to measure temperature through transparent materials, such as glass, as readings will not be accurate.
- ✓ If the target surface is contaminated with frost, oil, dust, or other residues, clean it prior to measurement.

8. END OF LIFE

When the product is no longer in service, it should be safely dismantled. Components must be carefully removed and sorted for recycling, reuse, or disposal in accordance with safety and environmental regulations, ensuring that all parts are handled responsibly and any hazardous materials are managed appropriately.

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.

REGISTER YOUR PURCHASE HERE

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.

BATTERY REMOVAL. SEE SECTION 5.

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.

Note: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice. Please note that other versions of this product are available. If you require documentation for alternative versions, please email or call our technical team on technical@sealey.co.uk or 01284 757505.
Important: No Liability is accepted for incorrect use of this product.
Warranty: Guarantee is 12 months from purchase date, proof of which is required for any claim.

Jack Sealey Ltd t/a Sealey Group, Kempson Way, Suffolk Business Park, Bury St Edmunds, Suffolk, IP32 7AR UK
Jack Sealey (EU) Ltd t/a Sealey Group, Farney Street, Carrickmacross, Co. Monaghan, A81 PK68 Ireland
Tel: 01284 757500 ▪ **Email:** sales@sealey.co.uk ▪ **Web:** www.sealey.co.uk