

AIOMEST AI-1500

AIOMEST AI-1500 High Temperature Infrared Thermometer User Manual

Model: AI-1500 | Brand: AIOMEST

1. INTRODUCTION

The AIOMEST AI-1500 is a non-contact infrared thermometer designed for measuring high temperatures across a wide range of industrial and household applications. This device provides quick and accurate surface temperature readings without physical contact, making it ideal for measuring hot, hazardous, or hard-to-reach objects. It is suitable for use in HVAC, cooking, kilning, casting, and other similar environments. **This thermometer is not intended for measuring human or animal body temperature.**

2. SAFETY INFORMATION

- **Laser Safety:** This device uses a Class 2 laser. Do not stare directly into the laser beam or direct it at people or animals. Avoid direct eye exposure.
- **Not for Medical Use:** This thermometer is designed for industrial and general-purpose temperature measurement. It is not a medical device and should not be used for diagnosing or monitoring human or animal health conditions.
- **Temperature Range:** Ensure the measured object's temperature is within the device's specified range (-58°F to 2732°F / -50°C to 1500°C).
- **Handling:** Do not expose the device to extreme temperatures, humidity, or mechanical shock. Keep it away from strong electromagnetic fields.
- **Cleaning:** Use a soft, damp cloth for cleaning. Do not use abrasive cleaners or immerse the device in water.

3. PACKAGE CONTENTS

Upon opening the package, please verify that all items are present and undamaged:

- AIOMEST AI-1500 Infrared Thermometer
- 9V Battery
- Screwdriver
- Carrying Case
- User Guide (this manual)

4. PRODUCT OVERVIEW

The AIOMEST AI-1500 features a clear LCD display, intuitive buttons for mode selection and unit conversion, and a comfortable handheld design. It incorporates dual lasers for precise targeting and an adjustable emissivity setting for accurate measurements across various materials.



Figure 4.1: AIOMEST AI-1500 Infrared Thermometer with display indicating temperature range and accuracy.

Figure 4.2: Illustration of the upgraded sensor and dual laser targeting system for enhanced accuracy and distance measurement.

5. SETUP

5.1 Battery Installation

The AIOMEST AI-1500 requires one 9V battery for operation. Follow these steps to install the battery:

1. Locate the battery compartment on the handle of the thermometer.
2. Use the included screwdriver to loosen the screw on the battery cover.
3. Remove the battery cover.
4. Insert the 9V battery, ensuring correct polarity (+ and - terminals).
5. Replace the battery cover and tighten the screw with the screwdriver.



Figure 5.1: Visual guide for installing the 9V battery into the thermometer's handle.

6. OPERATING INSTRUCTIONS

6.1 Taking a Measurement

1. Point the thermometer at the target object. The dual lasers will indicate the measurement area.
2. Press and hold the trigger button. The current temperature will be displayed on the LCD screen.
3. Release the trigger button to hold the last measured temperature on the display.



Figure 6.1: Example of using the thermometer to measure the temperature inside a furnace.

6.2 Distance-to-Spot Ratio (D:S)

The AI-1500 has a D:S ratio of 30:1. This means that from a distance of 30 units, the thermometer will measure a spot area of 1 unit. For example, if you are 30 cm away from an object, the measurement will be taken from a 1 cm diameter spot. A higher D:S ratio allows for accurate measurements from a greater distance, which is beneficial for safety when measuring very hot or hazardous surfaces.



Figure 6.2: Explanation of the 30:1 D:S ratio, showing how distance affects the measurement spot size.

6.3 Emissivity Adjustment

Emissivity (ϵ) is a measure of an object's ability to emit infrared energy. Different materials have different emissivity values. For accurate readings, adjust the emissivity setting on your AI-1500 to match the material being measured. The AI-1500 allows adjustment from 0.1 to 1.0. Consult a standard emissivity table for common materials if needed.

6.4 Unit Conversion (°C/°F)

To switch between Celsius (°C) and Fahrenheit (°F), press the dedicated °C/°F button on the device. The selected unit will be displayed on the LCD screen.

6.5 Measurement Tips

- Do not point the sensor lens directly into smoke or steam, as this can interfere with accurate readings.
- When measuring liquids, maintain a measuring angle between 45° and 60° to minimize reflections and ensure better accuracy.
- For best results, ensure the target area is larger than the spot size indicated by the D:S ratio.



Figure 6.3: Visual guidance on proper measurement techniques, especially when dealing with steam or liquids.

7. MAINTENANCE

7.1 Cleaning

To clean the exterior of the thermometer, use a soft, slightly damp cloth. Do not use abrasive cleaning agents, solvents, or immerse the device in water. Keep the lens clean and free of dust or debris for optimal performance.

7.2 Storage

When not in use, store the thermometer in its carrying case in a cool, dry place, away from direct sunlight and extreme temperatures. Remove the battery if the device will not be used for an extended period to prevent leakage.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
Device does not turn on	Dead or incorrectly installed battery	Check battery polarity. Replace with a new 9V battery.
Inaccurate readings	Incorrect emissivity setting; Lens is dirty; Distance-to-spot ratio not considered; Measuring through steam/smoke	Adjust emissivity for the target material. Clean the lens. Ensure target is larger than spot size. Avoid measuring through obstructions.
Laser not visible	Laser function disabled; Low battery	Check device settings to ensure laser is enabled. Replace battery if low.
Display shows "HI" or "LO"	Temperature is outside the measurement range	The measured temperature is above (HI) or below (LO) the device's operational range (-58°F to 2732°F / -50°C to 1500°C).

9. SPECIFICATIONS

Feature	Specification
Model Name	AI-1500
Temperature Range	-58°F to 2732°F (-50°C to 1500°C)
Accuracy	±2% (above 0°C) / ±4°C (below -50°C)
Distance-to-Spot Ratio (D:S)	30:1
Response Time	0.25 seconds
Emissivity	Adjustable 0.1 to 1.0
Display Type	LCD with backlight
Power Source	9V Battery
Material	Plastic
Product Care	Wipe Clean

10. WARRANTY AND SUPPORT

10.1 Warranty Information

The AIOMEST AI-1500 Infrared Thermometer comes with a 12-month warranty from the date of purchase. This warranty covers manufacturing defects and ensures the product is free from defects in material and workmanship under normal use.

10.2 Technical Support

AIOMEST provides life-long technical support for this product. If you encounter any issues or have questions regarding the operation, maintenance, or troubleshooting of your device, please contact AIOMEST customer service. Refer to the product packaging or the official AIOMEST website for contact details.

