

## VOLTCRAFT IR 500-12S

# VOLTCRAFT IR 500-12S Infrared Thermometer User Manual

Model: IR 500-12S | Brand: VOLTCRAFT

## 1. INTRODUCTION

The VOLTCRAFT IR 500-12S is a robust and practical infrared thermometer designed for non-contact temperature measurement. It features a pistol grip for comfortable handling and allows for safe and precise surface temperature readings of objects ranging from -50 °C to +500 °C. This device is suitable for various applications in home, hobby, and professional environments, including measuring temperatures of rotating parts, live conductors, hard-to-reach areas, or dangerously hot objects.

## 2. SAFETY INSTRUCTIONS

Please read and understand all safety instructions before operating the device. Failure to follow these instructions may result in injury or damage to the device.

- **Laser Safety:** Do not look directly into the laser beam or point it at people or animals. The laser is used for aiming only and is not part of the temperature measurement process.
- **Temperature Limits:** Do not expose the device to extreme temperatures outside its operating range (-50 °C to +500 °C) or to sudden, drastic temperature changes.
- **Electrical Safety:** This device measures surface temperature and is not designed to measure internal temperatures of living beings or to detect electrical current directly. Exercise caution when measuring hot or electrically live surfaces.
- **Cleaning:** Use a soft, damp cloth for cleaning. Do not use abrasive cleaners or solvents.
- **Battery Handling:** Ensure correct battery polarity. Remove batteries if the device will not be used for an extended period. Dispose of used batteries responsibly.
- **Maintenance:** Do not attempt to open or modify the device. Refer all servicing to qualified personnel.

## 3. PRODUCT OVERVIEW

Familiarize yourself with the components of your VOLTCRAFT IR 500-12S infrared thermometer.



**Figure 3.1:** Front view of the VOLT CRAFT IR 500-12S Infrared Thermometer, showing the display, measurement trigger, and control buttons.



**Figure 3.2:** Side view of the thermometer, illustrating the 12:1 distance-to-spot ratio for accurate measurements.



**Figure 3.3:** Angled view of the device, highlighting the VOLTCRAFT branding and model number.

### 3.1. Key Components

- **Measurement Trigger:** Located on the handle, used to initiate temperature readings.
- **LCD Display:** Digital display showing temperature readings, units, and other indicators.
- **Laser Pointer Button:** Activates/deactivates the aiming laser.
- **°C/°F Button:** Toggles between Celsius and Fahrenheit temperature units.
- **MAX/MIN Button:** Displays the maximum or minimum temperature recorded during a measurement session.
- **Infrared Sensor:** Located at the front of the device, responsible for detecting infrared radiation.
- **Battery Compartment:** Located in the handle for a 9V battery.

## 4. SETUP

### 4.1. Battery Installation

1. Locate the battery compartment cover on the handle of the thermometer.

2. Open the battery compartment cover.
3. Insert one 9V battery, ensuring correct polarity (+ and - terminals).
4. Close the battery compartment cover securely.

The device is now ready for use. If the battery indicator appears on the display, replace the battery.

## 5. OPERATING INSTRUCTIONS

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### 5.1. Taking a Measurement

1. Point the infrared sensor towards the target object.
2. Press and hold the measurement trigger. The laser pointer (if activated) will indicate the center of the measurement area.
3. The temperature reading will appear on the LCD display instantly.
4. Release the trigger to hold the last measured temperature on the display. The "HOLD" indicator will appear.

**Note on Distance-to-Spot Ratio:** The VOLT CRAFT IR 500-12S has an optical resolution of 12:1. This means that at a distance of 12 units, the measurement spot diameter is 1 unit. For accurate readings, ensure the target object is larger than the measurement spot size.

### 5.2. Unit Selection (°C/°F)

Press the °C/°F button to switch between Celsius and Fahrenheit temperature units.

### 5.3. MAX/MIN Function

While holding the measurement trigger, press the **MAX/MIN** button to cycle through the maximum and minimum temperatures recorded during the current measurement session. Release the trigger to exit this mode.

### 5.4. Laser Pointer

Press the laser button (often marked with a laser icon) to activate or deactivate the laser pointer. The laser assists in aiming the thermometer at the desired measurement spot.

### 5.5. Emissivity

The VOLT CRAFT IR 500-12S has a fixed emissivity of 0.95. This value is suitable for most organic materials, painted surfaces, and many non-metals. For highly reflective surfaces (e.g., polished metals), readings may be less accurate. No adjustment is required or possible on this model.

## 6. MAINTENANCE

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### 6.1. Cleaning

- Wipe the device casing with a soft, slightly damp cloth.
- Do not use abrasive cleaners, solvents, or immerse the device in water.
- Clean the infrared lens gently with a soft cloth or cotton swab, using only water or lens cleaning solution. Avoid scratching the lens.

### 6.2. Storage

- Store the thermometer 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.

## 7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Device does not turn on.	Low or dead battery; incorrect battery installation.	Replace the 9V battery; ensure correct polarity.
Inaccurate readings.	Measurement distance too far; target object too small; highly reflective surface; dirty lens.	Move closer to the target; ensure target is larger than spot size; consider emissivity limitations for reflective surfaces; clean the lens.
"Err" message on display.	Temperature outside measurement range; sensor error.	Ensure target temperature is within -50 °C to +500 °C; if error persists, contact support.
Laser not working.	Laser deactivated; low battery.	Press the laser button to activate; replace battery if low.

## 8. SPECIFICATIONS

Parameter	Value
Temperature Range	-50 °C to +500 °C (-58 °F to +932 °F)
Optical Resolution (D:S)	12:1
Response Time	500 ms
Emissivity	Fixed at 0.95
Laser Type	Single laser for aiming
Display Type	Digital LCD
Power Supply	1 x 9V battery (not included)
Dimensions (L x W x H)	3.9 x 7.3 x 14 cm (1.5 x 2.9 x 5.5 inches)
Weight	130 grams (approx. 4.6 oz)
Special Features	Non-contact measurement, MAX/MIN function, °C/°F selection
Article Model Number	1599562

## 9. WARRANTY AND SUPPORT

### 9.1. Warranty Information

This VOLT CRAFT product is covered by a standard warranty for spare parts for a period of 1 year from the date of

purchase. Please retain your proof of purchase for warranty claims. The warranty covers defects in materials and workmanship under normal use. It does not cover damage caused by misuse, accident, unauthorized modification, or improper maintenance.

## 9.2. Customer Support

For technical assistance, troubleshooting, or warranty inquiries, please contact VOLTCRAFT customer support. Refer to the contact information provided with your product packaging or visit the official VOLTCRAFT website for the most up-to-date support details.

**Online Resources:** For additional information and FAQs, please visit the [VOLTCRAFT official website](#).

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