

## Manuals+

[Q & A](#) | [Deep Search](#) | [Upload](#)

[manuals.plus](#) /

› [Mastercool](#) /

› [Mastercool 52224-A-SP Infrared Thermometer with Circular Laser \(12:1 Ratio\) Instruction Manual](#)

## Mastercool 52224-A-SP

# Mastercool 52224-A-SP Infrared Thermometer with Circular Laser (12:1 Ratio) Instruction Manual

Model: 52224-A-SP

## 1. INTRODUCTION

The Mastercool Infrared Thermometer with Circular Laser is a non-contact temperature measurement device designed for accuracy and ease of use. It features laser targeting, an enhanced backlit color LCD display, and an expanded temperature range for various applications. This manual provides essential information for the proper setup, operation, and maintenance of your device.



Figure 1: Mastercool Infrared Thermometer with included accessories.

## 2 PRODUCT OVERVIEW

## 2. PRODUCT OVERVIEW

The Mastercool Infrared Thermometer allows for quick and accurate temperature readings without direct contact, making it ideal for measuring acute surface temperatures. Its compact design ensures portability and simple operation.

### Key Features:

- **Non-Contact Measurement:** Safely measure temperatures from a distance.
- **Circular Laser Targeting:** Precisely indicates the measurement area.
- **Backlit Color LCD Display:** Provides clear visibility of readings in various lighting conditions.
- **Expanded Temperature Range:** Measures from -58 to 932°F (-50 to 500°C).
- **12:1 Distance-to-Spot Ratio:** Allows accurate measurement of targets at greater distances.
- **Automatic Power Off:** Conserves battery life after 15 seconds of inactivity.



Figure 2: Labeled components of the infrared thermometer.

## 3. PACKAGE CONTENTS

Verify that all items are present in your package:

- Mastercool Infrared Thermometer
- 1" Dial Thermometer (0-220°F)
- Plastic Molded Carrying Case
- 2 AAA Batteries
- Instruction Manual

## 4. SETUP

### 4.1 Battery Installation

The thermometer requires 2 AAA batteries for operation. To install or replace batteries:

1. Locate the battery compartment on the handle of the thermometer.
2. Slide open the battery compartment cover.
3. Insert 2 AAA batteries, ensuring correct polarity (+/-).
4. Close the battery compartment cover securely.



Figure 3: Battery compartment showing 2 AAA batteries.

## 5. OPERATING INSTRUCTIONS

### 5.1 Taking a Measurement

To take a temperature reading:

1. Point the thermometer at the desired surface.
2. Press and hold the measurement trigger. The circular laser will activate, indicating the measurement area.
3. The temperature reading will appear instantly on the backlit LCD display.

4. Release the trigger to hold the reading on the display. The device will automatically power off after 15 seconds of inactivity.



Figure 4: Circular laser targeting for precise measurement.

## 5.2 Display Information

The backlit color LCD displays the following information:

- **Surface Temperature:** The current temperature reading.
- **Maximum Temperature:** The highest temperature recorded during the measurement session.
- **Battery Indicator:** Shows remaining battery life.
- **Temperature Unit Indicator:** Displays °F or °C.
- **Hold Indicator:** Appears when the trigger is released, holding the last reading.



Figure 5: Detailed view of the LCD display.

### 5.3 Changing Temperature Units

To switch between Fahrenheit (°F) and Celsius (°C), press the dedicated °C/F button located below the display.

### 5.4 Emissivity

This thermometer has a fixed emissivity setting of 0.95. Emissivity is a measure of an object's ability to emit infrared energy. A setting of 0.95 is suitable for most organic materials, painted surfaces, and many common materials. For highly reflective surfaces, readings may be less accurate.

## 6. UNDERSTANDING DISTANCE-TO-SPOT RATIO (D:S)

The Mastercool Infrared Thermometer features a 12:1 distance-to-spot ratio. This means that for every 12 units of distance the thermometer is from the target, the diameter of the area being measured is 1 unit. For example, if the thermometer is 12

inches away from the target, it will measure a 1-inch diameter spot. To ensure the most accurate reading, position the thermometer as close to the target as safely possible, especially when measuring small areas.



Figure 6: Measuring temperature of a ceiling vent.



Figure 7: Measuring temperature of a car brake rotor.

## 7. MAINTENANCE

### 7.1 Cleaning

To clean the thermometer, wipe it with a clean, damp cloth. Do not use abrasive cleaners or immerse the device in water.

### 7.2 Storage

Store the thermometer in its convenient plastic molded carrying case when not in use to protect it from dust and damage. Remove batteries if storing for extended periods.

## 8. TROUBLESHOOTING

If the thermometer is not functioning correctly, consider the following:

- **No Display/Low Battery:** Check if the batteries are correctly installed or replace them with new AAA batteries.
- **Inaccurate Readings:** Ensure the thermometer is within the recommended distance-to-spot ratio for the target size. Avoid measuring highly reflective surfaces directly.
- **Error Message:** If an error message appears, allow the device to return to ambient temperature if it has been exposed to extreme heat or cold.

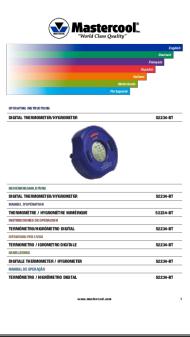
## 9. SPECIFICATIONS

Feature	Specification
Brand	Mastercool
Model Name	52224-A-SP
Non-Contact Temperature Range	-58 to 932°F (-50 to 500°C)
Field Of View (D:S Ratio)	12 : 1
Display Illumination	Backlit LCD Color display
Target Indicator	Circular Laser Spot
Emissivity	0.95 (Fixed)
Resolution	0.5°F / 0.5°C
Accuracy	+/-2°C (4°F) or +/-2% of reading
Response Time	0.5 seconds
Power Off	Automatic after 15 seconds
Battery	2 AAA
Battery Life	Approximately 14 hours
Item Weight	6.3 ounces
Outer Material	Plastic

## 10. WARRANTY AND SUPPORT

For warranty information or technical support, please contact Mastercool customer service. Refer to the product packaging or the official Mastercool website for the most up-to-date contact details.

## Related Documents - 52224-A-SP

	<p><a href="#">Mastercool Digital Thermometer/Hygrometer 52234-BT User Manual</a></p> <p>Comprehensive operating instructions and specifications for the Mastercool 52234-BT Digital Thermometer/Hygrometer, including setup, usage, troubleshooting, and warranty information.</p>
	<p><a href="#">Mastercool 43301-A 27-Piece Master Radiator Pressure Test Kit Instructions</a></p> <p>Detailed instructions for the Mastercool 43301-A 27-Piece Master Radiator Pressure Test Kit. Covers safety, operation for cooling system and radiator cap leak testing, coolant purging and refilling, maintenance, and includes a summary of the extensive vehicle compatibility chart.</p>

 <p>Mastercool World Class Quality</p> <p>CHARGING AND TESTING MANIFOLD TESTING MANIFOLD MANIFOLD MANIFOLD GAUGES MANIFOLD GAUGES ANALYZER ANALYZER Gauge Manifolds Gauge Manifolds MANIFOLDS ANALIZADORES DE CÁPSULA Y TESTE CE 15</p>	<p><a href="#"><u>Mastercool Charging and Testing Manifold Operating Instructions</u></a></p> <p>Comprehensive operating instructions for Mastercool charging and testing manifold gauge sets, detailing pre-service procedures, testing, charging, and important safety notes for R/AC systems, especially high-pressure CO2 (R744) systems.</p>
 <p>Mastercool World Class Quality</p> <p>Mastercool A/C SYSTEM ANALYZER OPERATING MANUAL A/C SYSTEM ANALYZER BEDienungsanleitung A/C SYSTEM ANALYZER MANUEL D'OPÉRATION ANALYSEUR DE SYSTÈMES A/C INSTRUCCIÓN DE OPERACIÓN ANALIZADOR DE SISTEMAS A/C ISTRUZIONI PER L'USO ANALIZZATORE D'IMPIANTI A/C HANDLEIDING AIRCOSYSTEM ANALYSAPPARAAT MANUAL DE OPERACIÓN ANALISADOR DE SISTEMAS DE A/C CE 15</p>	<p><a href="#"><u>Mastercool A/C System Analyzer Operating Manual</u></a></p> <p>Operating manual for the Mastercool A/C System Analyzer, detailing its features, functions, testing procedures, calibration, and specifications for HVAC professionals.</p>
 <p>Mastercool World Class Quality</p> <p>Mastercool HYDRA-SWAGE TUBE EXPANDING TOOL KIT 71600-A CE 15</p>	<p><a href="#"><u>Mastercool Hydra-Swage Tube Expanding Tool Kit - Operating Instructions</u></a></p> <p>Detailed operating instructions and parts list for the Mastercool Hydra-Swage Tube Expanding Tool Kit (Model 71600-A), covering imperial and metric sizes.</p>
 <p>Mastercool A/C RECOVERY SET PARTS LIST R134a/R1234yf CE 15</p>	<p><a href="#"><u>Mastercool R134a/R1234yf Complete A/C Recovery Set Parts Breakdown</u></a></p> <p>Detailed parts breakdown for the Mastercool R134a/R1234yf Complete A/C Recovery Set, including part numbers and descriptions for tanks, gauges, hoses, and conversion kits.</p>