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## MESTEK IR02C-Y

# MESTEK IR02C-Y Infrared Thermometer User Manual

Brand: MESTEK | Model: IR02C-Y

## INTRODUCTION

This manual provides detailed instructions for the safe and effective operation of your MESTEK IR02C-Y Infrared Thermometer. This device is designed for non-contact surface temperature measurement and includes a K-type thermocouple probe for internal temperature readings. It also features ambient temperature and humidity measurement, dew point calculation, and specialized alarm modes for mildew and temperature differences.

## SAFETY INFORMATION

- **Do not measure human or animal body temperature.** This device is intended for industrial, culinary, and general surface temperature measurements only.
- Avoid direct eye exposure to the laser beam. The laser is used for targeting purposes only.
- Do not point the laser at reflective surfaces, as the reflected beam could cause eye injury.
- Keep the device away from children.
- Do not use the thermometer in environments with explosive gas, vapor, or dust.
- Allow the thermometer to acclimatize to the ambient temperature for 10-20 minutes before use, especially if moving between environments with significant temperature differences. This ensures accurate readings.

## PACKAGE CONTENTS

- 1 x MESTEK IR02C-Y Infrared Thermometer
- 1 x K-type Temperature Sensor Probe
- 2 x 1.5V AAA Batteries
- 1 x Leather Handbag
- 1 x User Manual

## PRODUCT OVERVIEW

Familiarize yourself with the components and display of your MESTEK IR02C-Y thermometer.



Figure 1: Labeled diagram of the MESTEK IR02C-Y Infrared Thermometer, highlighting its various components and display elements.

## SETUP

### Battery Installation

1. Locate the battery compartment on the handle of the thermometer.
2. Open the battery cover.
3. Insert two 1.5V AAA batteries, ensuring correct polarity (+/-).
4. Close the battery cover securely.

**Video 1:** This video demonstrates the process of installing batteries into the MESTEK IR02C-Y Infrared Thermometer and provides an overview of its display parameters and three main functions.

## OPERATING INSTRUCTIONS

## 1. Infrared Temperature Measurement

1. Point the infrared sensor towards the target object.
2. Press and hold the measurement trigger. The laser pointer will activate (if enabled) to indicate the measurement area.
3. The surface temperature will be displayed on the LCD screen. Release the trigger to hold the reading.



### Response time

within 0.5s



### Measurement range

-58°F~1472°F (-50°C~800°C)



### High Precise

± (1.5% or ±2 °C/4°F)

**Figure 2:** The thermometer in use, showing the laser guidance for precise targeting during infrared temperature measurement.

## 2. K-Type Thermocouple Measurement

This mode is ideal for measuring the internal temperature of liquids or semi-solids, providing a more stable and accurate reading than surface infrared measurement.

1. Insert the K-type thermocouple probe into the designated port on the thermometer.
2. Immerse the metal tip of the probe into the substance you wish to measure.
3. The thermometer will display both the K-type probe temperature and the infrared surface temperature simultaneously.

# K-Type Thermocouple Probe

**Infrared measurement: -58°F~1472°F (-50°C~800°C)**

**Thermocouple measurement: 14°F-932°F (-10°C-500°C)**



**Figure 3:** Demonstrates the use of the K-type thermocouple probe to measure the internal temperature of a liquid, alongside the infrared reading.

## 3. Mildew Alarm Mode

This mode helps assess the risk of mildew formation based on surface temperature and dew point temperature.

1. Press the 'MODE' button repeatedly until the mildew alarm icon is displayed.
2. Point the thermometer at the surface to be tested.
3. The indicator light will show:
  - **Green:** No mildew detected.
  - **Yellow:** Tendency for mildew.
  - **Red:** Mildew detected.

## 4. Temperature Difference Alarm Mode

This mode alerts you to significant temperature differences between the measured surface and the ambient environment.

1. Press the 'MODE' button repeatedly until the temperature difference alarm icon is displayed.

2. Point the thermometer at the surface to be tested.
3. The indicator light will show:
  - **Green:** Temperature difference is less than 5°C (41°F).
  - **Yellow:** Temperature difference is between 5°C (41°F) and a higher threshold.
  - **Red:** Temperature difference is greater than the higher threshold (e.g., indicating a significant anomaly).

## ADVANCED FUNCTIONS

### Adjusting Emissivity ( $\epsilon$ )

Emissivity is a crucial factor for accurate infrared temperature measurement. Different materials have different emissivity values. The MESTEK IR02C-Y allows adjustment from 0.10 to 1.00.

1. Press the 'MODE' button three times to enter emissivity adjustment mode. The emissivity value ( $\epsilon$ ) will flash on the screen.
2. Use the Up (▲) and Down (▼) buttons to adjust the value according to the material being measured.
3. Refer to common emissivity tables for guidance. For example, most organic materials and painted surfaces have an emissivity of 0.95.

## Adjustable Emissivity

Adjustable Range: 0.1-1.0

The emissivity can be adjusted according to the material the measuring object



**Figure 4:** Examples of measuring various materials with adjustable emissivity, such as ice, grilled meat, fried food, and wood.

## Unit Conversion (°C/°F)

To switch between Celsius and Fahrenheit:

1. Press the 'MODE' button four times.
2. Use the Up (▲) or Down (▼) buttons to select your desired unit.

## Laser ON/OFF

To toggle the laser pointer:

1. Press and hold the Up (▲) button for 2 seconds.
2. The laser symbol on the display will indicate its status.

## MAX/HOLD Function

The device automatically holds the last measured value when the trigger is released. It can also display the maximum temperature recorded during a continuous scan.

## Auto Power-Off

To conserve battery life, the thermometer will automatically shut off after 30 seconds of inactivity.

## Low Battery Indicator

A low battery icon will appear on the display when the batteries need to be replaced.

## APPLICATIONS

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The MESTEK IR02C-Y Infrared Thermometer is suitable for a wide range of applications, including:

- **Cooking:** Ovens, grills, frozen foods, frying.
- **Home Use:** Checking refrigerator/freezer temperatures, HVAC systems, radiators.
- **Automotive:** Engine diagnostics, electrical repairs.
- **Industrial:** Factory machinery, electrical circuits, monitoring fire hazards.
- **Horticulture:** Soil temperature, environmental humidity.
- **General:** Water temperature, adapters, and other household appliances.



**Figure 5:** Diverse applications of the thermometer, including culinary, automotive, and home heating system checks.

## MAINTENANCE

- **Cleaning:** The product cannot be washed. Clean the device with a soft, damp cloth. Do not use abrasive cleaners or solvents.
- **Storage:** Store the thermometer in its provided handbag in a dry, cool place when not in use.
- **Battery Replacement:** Replace batteries promptly when the low battery indicator appears to ensure continued accuracy and functionality.

## TROUBLESHOOTING

- **Inaccurate Readings:** Ensure the device has acclimatized to the ambient temperature for 10-20 minutes. Verify the emissivity setting matches the material being measured. Keep the measurement distance (D:S ratio) appropriate for the target size.
- **No Display/Power:** Check battery installation and ensure batteries are not depleted. Replace with fresh AAA batteries if necessary.
- **Laser Not Working:** Ensure the laser is enabled (refer to 'Laser ON/OFF' section).

- **K-Type Probe Not Working:** Ensure the probe is securely inserted into the port.
- **Error Messages:** If an error message appears, try restarting the device by removing and reinserting the batteries. If the issue persists, contact customer support.

## SPECIFICATIONS

Feature	Specification
Temperature Measurement Range (Infrared)	-50 °C ~ 800 °C (-58 °F ~ 1472 °F)
Temperature Measurement Range (K-Type Probe)	-10 °C ~ 500 °C (14 °F ~ 932 °F)
Accuracy (-50 °C ~ 0 °C)	± 3 °C (± 6 °F)
Accuracy (0 °C ~ 800 °C)	± (1.5% reading + 2 °C) / ± (1.5% reading + 4 °F)
Ambient Temperature Accuracy (0 °C ~ 45 °C)	± 1.0 °C (± 2 °F)
Ambient Temperature Accuracy (-10 °C ~ 0 °C, 45 °C ~ 60 °C)	± 1.5 °C (± 32 °F)
Humidity Accuracy (20% ~ 80% RH)	± 4.0% RH
Humidity Accuracy (0% ~ 20%, 80% ~ 100% RH)	± 5.0% RH
Response Time	≤ 0.5s
Distance to Spot Ratio (D:S)	12:1
Emissivity	Adjustable 0.1 - 1.0
Power	2 x 1.5V AAA Batteries (included)
Display Type	Color LCD with Backlight

Feature	Specification
Special Functions	MAX/HOLD, Low Battery Indication, Auto Power-Off, Non-contact Laser Measurement, K-type Probe Measurement, Mildew Alarm Mode, Temperature Difference Alarm Mode, Ambient Temperature/Humidity, Dew Point Temperature
Product Dimensions	13.99 x 9.39 x 3.2 cm
Product Weight	310 g
Material	Plastic
Certifications	CE, EMC, FCC, RoHS, WEEE

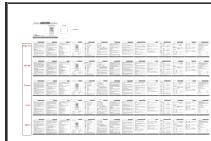
## WARRANTY AND SUPPORT

MESTEK offers a lifetime warranty for this product. If you encounter any issues or have questions regarding the operation or performance of your IR02C-Y Infrared Thermometer, please contact MESTEK customer support for assistance. Our professional engineers have thoroughly checked the product to ensure quality and reliability.

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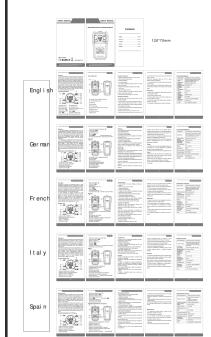
## Related Documents - IR02C-Y

	<p><a href="#">MESTEK IR02C Infrared Thermometer Instruction Manual</a></p> <p>Comprehensive instruction manual for the MESTEK IR02C Infrared Thermometer, detailing safety precautions, device features, measurement methods, radiance settings, battery replacement, and technical specifications for accurate temperature readings.</p>
	<p><a href="#">MESTEK IR03 Infrared Thermometer User Manual</a></p> <p>User guide for the MESTEK IR03 digital infrared thermometer, covering operation, safety, specifications, and maintenance for accurate non-contact temperature measurement.</p>
	<p><a href="#">MESTEK IR02C Průmyslový bezkontaktní teploměr se sondou -50/800 °C Uživatelský manuál</a></p> <p>Uživatelský manuál pro průmyslový bezkontaktní teploměr MESTEK IR02C se sondou, pokrývající bezpečnostní upozornění, popis zařízení, metody měření, nastavení, specifikace a výměnu baterií.</p>
	<p><a href="#">MESTEK Kickspace Heater Installation Instructions and Technical Data</a></p> <p>Comprehensive installation, operation, maintenance, and troubleshooting guide for MESTEK Kickspace Heaters (Models K, T, TK, HAV, W, F, FK) including dimensional data, electrical connections, system considerations, and warranty information.</p>



### [MESTEK DM97S Digital Multimeter User Manual](#)

Comprehensive user manual for the MESTEK DM97S Digital Multimeter, covering its features, specifications, and operating instructions in multiple languages.



### [MESTEK WM700A Moisture Meter User Manual](#)

Comprehensive user manual for the MESTEK WM700A moisture meter, detailing its features, operation, and specifications in multiple languages.