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## BENETECH GM900

# BENETECH GM-900 Infrared Thermometer User Manual

Model: GM-900 | Brand: BENETECH

## INTRODUCTION

This user manual provides comprehensive instructions for the safe and effective operation of the BENETECH GM-900 Infrared Thermometer. This device is designed for non-contact temperature measurement, offering a wide temperature range and various advanced features for accurate readings.

The GM-900 is suitable for measuring surface temperatures of objects that are hazardous to approach or inaccessible, such as high-voltage parts or moving machinery. Its precise laser targeting ensures accurate measurement.

## PRODUCT OVERVIEW



Figure 1: Main view of the BENETECH GM-900 Infrared

Thermometer, showing the full device and a detailed inset of its LCD display.



**Figure 2:** Close-up view of the GM-900's LCD display, showing temperature readings, emissivity setting, battery indicator, and hold function.



**Figure 3:** Side view of the GM-900, highlighting its ergonomic design and trigger.

The BENETECH GM-900 features a clear LCD display with backlight, intuitive button controls for settings like emissivity and unit selection, and a comfortable ergonomic grip. It includes a laser pointer for precise targeting of measurement areas.

## SETUP

### 1. Battery Installation

1. Locate the battery compartment on the handle of the thermometer.
2. Gently pull the handle cover downwards to open the compartment.



**Figure 4:** Battery compartment opened, showing terminals for 9V battery.

3. Insert one 9V battery (not included) into the compartment, ensuring correct polarity (+/-).
4. Close the battery compartment securely.

## 2. Initial Power On

After battery installation, press the trigger to power on the device. The LCD display will illuminate.

# OPERATING INSTRUCTIONS

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## 1. Taking a Measurement

1. Point the thermometer at the target object. Ensure the target fills the measurement spot as much as possible. Refer to the Distance to Spot Ratio (D:S) in the Specifications section.
2. Press and hold the trigger. The temperature reading will appear on the LCD display instantly.
3. Release the trigger to hold the reading on the display (Data Hold Function). The "HOLD" icon will appear.

## 2. Unit Selection (°C/°F)

Press the **°C/°F** button (usually located near the display) to switch between Celsius and Fahrenheit temperature units.

## 3. Emissivity Adjustment

Emissivity (EMS) is crucial for accurate infrared temperature measurement. The GM-900 allows adjustment from 0.10 to 1.00 (default is 0.95).

1. Press the **SET** button to enter emissivity adjustment mode.
2. Use the Up/Down arrow buttons to increase or decrease the emissivity value.
3. Press **SET** again to confirm and exit.

## 4. Laser Pointer

The laser pointer assists in targeting the measurement area. Press the laser button (often depicted with a laser icon) to toggle the laser on or off.

## 5. Backlight

Press the backlight button (often depicted with a light bulb icon) to toggle the LCD backlight on or off for better visibility in different lighting conditions.

## 6. Advanced Functions (MODE Button)

The **MODE** button cycles through various measurement functions:

- **MAX:** Displays the maximum temperature recorded during a continuous scan.
- **MIN:** Displays the minimum temperature recorded during a continuous scan.
- **AVG:** Displays the average temperature recorded during a continuous scan.
- **DIF:** Displays the difference between the maximum and minimum temperatures recorded.
- **HAL (High Alarm):** Set a high temperature alarm. If the measured temperature exceeds this value, an alarm will sound.
- **LAL (Low Alarm):** Set a low temperature alarm. If the measured temperature falls below this value, an alarm will sound.
- **STO (Storage):** Access memory storage (up to 12 data points).

To set alarm values, select HAL or LAL mode, then use the Up/Down arrow buttons to adjust the threshold. Press **SET** to confirm.

## MAINTENANCE

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### 1. Cleaning the Lens

The infrared lens is the most delicate part of the thermometer. Clean it carefully with a soft cloth or cotton swab and water, or medical alcohol. Do not use abrasive cleaners or solvents.

### 2. Cleaning the Casing

Clean the thermometer casing with a damp cloth and mild soap. Do not immerse the device in water.

### 3. Storage

Store the thermometer in a cool, dry place, away from direct sunlight and extreme temperatures. If storing for extended periods, remove the battery to prevent leakage.

## TROUBLESHOOTING

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Problem	Possible Cause	Solution
Device does not power on.	Low or dead battery; incorrect battery installation.	Replace the 9V battery. Ensure correct polarity.
Inaccurate readings.	Incorrect emissivity setting; lens is dirty; target too far or too small.	Adjust emissivity for the target material. Clean the lens. Ensure target fills the measurement spot.
Laser pointer not working.	Laser function is turned off.	Press the laser button to activate.

Problem	Possible Cause	Solution
Display is dim or flickering.	Low battery.	Replace the 9V battery.

## SPECIFICATIONS

Parameter	Value
Temperature Range	-50 ~ 950 °C (-58 ~ 1742 °F)
Accuracy	±1.5 °C or ±1.5% (0°C to 950°C); ±3 °C (-50°C to 0°C)
Resolution	0.1 °C or 0.1 °F
Repeatability	1 % or 1 °C
Response Time	500 ms (0.5 seconds), 95% response
Spectral Response (Wavelength)	8 ~ 14 µm
Distance to Spot Ratio (D:S)	12:1
Emissivity	0.10 ~ 1.00 (Adjustable, Preset at 0.95)
Operating Temperature	0 ~ 40 °C (32 ~ 104 °F)
Storage Temperature	-20 ~ 60 °C (-4 to 140 °F)
Relative Humidity	10 ~ 95% R.H. non-condensing, up to 30 °C
Power	1 x 9V Battery (not included)
Battery Life	22 hours (Non-Laser Mode), 12 hours (Laser Mode)
Dimensions (L x W x D)	approx. 175 x 100 x 49 mm (6.89 x 3.94 x 1.93 inch)
Weight (without battery)	approx. 226 g (7.97 oz)

## WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided with your purchase or contact BENETECH customer service. Keep your purchase receipt as proof of purchase.

For further assistance, please visit the official BENETECH website or contact their authorized service centers.

