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Elitech DIT-220

Elitech DIT-220 Infrared Thermometer User Manual

Model: DIT-220 | Brand: Elitech

1. INTRODUCTION

The Elitech DIT-220 is a non-contact digital infrared thermometer designed for safe and accurate surface temperature measurements. It features adjustable emissivity, a backlit LCD display, and various measurement modes, making it suitable for a wide range of applications including cooking, HVAC, automotive, and industrial use.



Figure 1: Elitech DIT-220 Infrared Thermometer

2. PRODUCT FEATURES

- **Instant & Accurate Reading:** Measures surface temperatures from -58°F to 986°F (-50°C to 530°C) with high accuracy ($\pm 1.5\%$).
- **Adjustable Emissivity:** Customizable setting (0.10 to 1.00) for accurate readings on various surfaces. Default is 0.95.
- **User-Friendly Features:** MAX/MIN/AVG temperature hold, backlit LCD, and unit conversion ($^{\circ}\text{F}/^{\circ}\text{C}$).
- **Safe & Versatile Application:** 12:1 distance-to-spot ratio for safe measurement of hazardous or hard-to-reach surfaces.
- **Durable & Portable Design:** Ergonomic, lightweight, with auto shut-off and low power indication.



Figure 2: Key Features Overview

3. PACKAGE CONTENTS

- 1 x Elitech DIT-220 Infrared Thermometer
- 2 x AAA Batteries

4. SETUP AND OPERATION

4.1 Battery Installation

1. Open the battery compartment located on the handle.
2. Insert the two AAA batteries, ensuring correct polarity.
3. Close the battery compartment securely.

Your browser does not support the video tag.

Video 1: Battery installation and basic function overview for the Elitech DIT-220 Infrared Thermometer.

Adaptable for Any Surface

Precision + Emissivity

Adjustable emissivity (0.10–1.00) ensures accurate readings for all materials.



Figure 3: Device Controls (Trigger, LCD, Mode Key)

- **Trigger:** Press to activate the laser and take a temperature reading. Release to hold the reading.
- **C/F Button:** Press to switch between Celsius (°C) and Fahrenheit (°F) temperature units.
- **Mode Button:** Cycles through different measurement modes (MAX/MIN/AVG, Emissivity, Calibration).
- **Backlight Button (Up Arrow):** Press to turn the LCD backlight on or off.
- **Laser On/Off Button (Down Arrow):** Press to turn the laser pointer on or off.

4.3 Taking a Measurement

1. Point the thermometer at the target surface.
2. Press and hold the trigger. The laser pointer will indicate the measurement area.
3. The temperature reading will appear on the LCD display.
4. Release the trigger to hold the reading on the display. The device will automatically shut off after a period of inactivity to conserve battery.

4.4 Distance to Spot Ratio (D:S)

The DIT-220 has a 12:1 distance-to-spot ratio. This means that at a distance of 12 inches, the measurement spot size will be 1 inch. To ensure accurate readings, position the thermometer at an appropriate distance from the target, ensuring the spot size is smaller than the object being measured.



Figure 4: Distance to Spot Ratio

4.5 Adjustable Emissivity

Emissivity (EMS) is the ability of a material to emit thermal energy. Different materials have different emissivity values. The DIT-220 allows you to adjust the emissivity from 0.10 to 1.00 for more accurate readings on various surfaces. The default setting is 0.95, which is suitable for most common materials like wood, ceramic, and food.

1. Press the 'MODE' button until 'EMS' appears on the display.
2. Use the Up/Down arrow buttons to adjust the emissivity value.
3. Press 'MODE' again to confirm and exit.

Accurate Measurement at a Safe Distance

Measure high-temperature surfaces from a safe distance with pinpoint accuracy

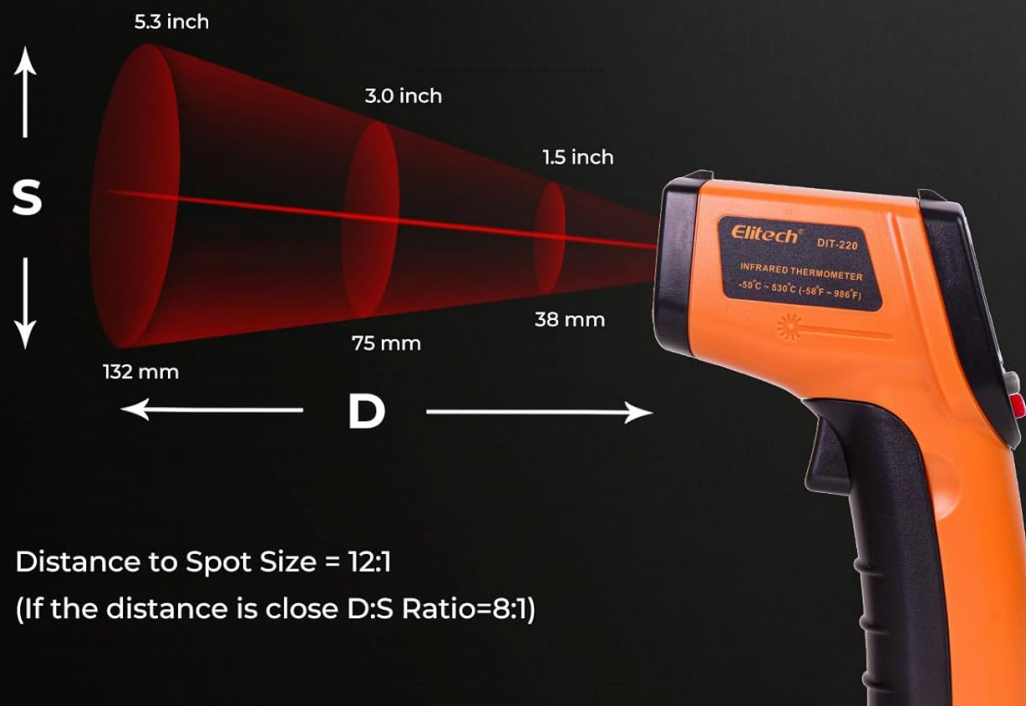


Figure 5: Adjustable Emissivity for Various Surfaces

4.6 MAX/MIN/AVG Temperature Hold

This feature allows you to view the maximum, minimum, or average temperature recorded during a continuous measurement session.

1. Press the 'MODE' button to cycle through MAX, MIN, and AVG display modes.
2. The corresponding value will be displayed.

Laser Targeting | Wide Range | Fast Response



-50°C ~ 530°C (-58°F ~ 986°F)
Wide Range



0.5s
Fast Response



±1.5°C (±2.7°F) or ±1.5%
High Accuracy



Figure 6: MAX/MIN/AVG Temperature Hold

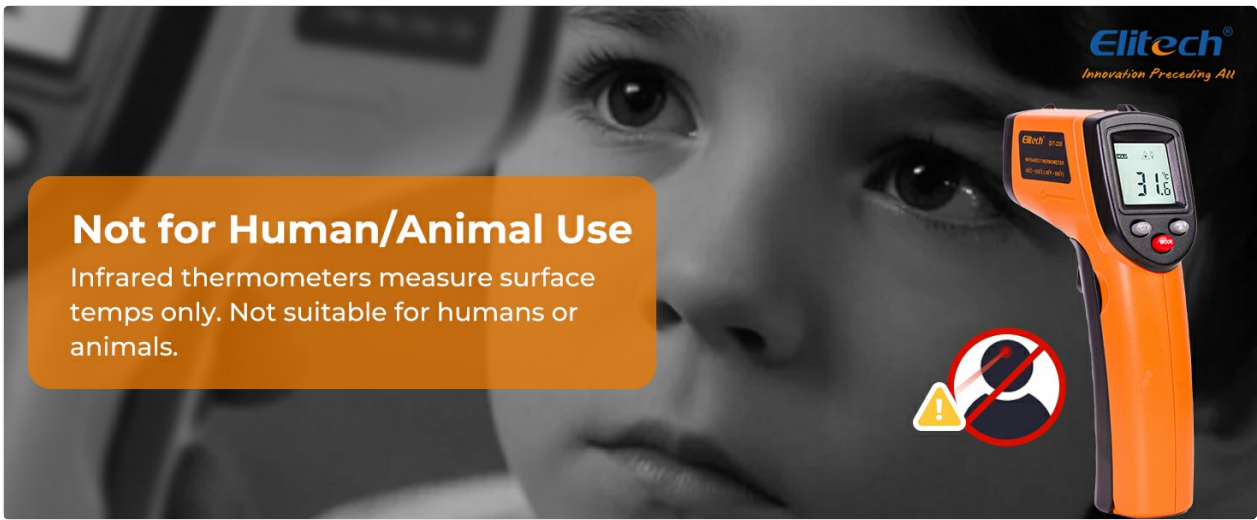
4.7 Temperature Calibration

The DIT-220 allows for temperature calibration within a range of -5°C to 5°C to fine-tune accuracy if needed.

1. Press the 'MODE' button until 'CAL' appears on the display.
2. Use the Up/Down arrow buttons to adjust the calibration value.
3. Press 'MODE' again to confirm and exit.

5. SAFETY INFORMATION AND PRECAUTIONS

- **Laser Safety:** Do not look directly into the laser beam or point it at people or animals.
- **Not for Human/Animal Use:** This infrared thermometer measures surface temperatures only and is not intended for medical use on humans or animals.
- **Avoid Smoke:** Do not measure through smoke, as it can significantly impact accuracy.
- **Glass Surfaces:** For better accuracy when measuring through glass, measure an opaque material placed on the glass surface.
- **Electrical Safety:** Use caution when measuring live electrical equipment.



Not for Human/Animal Use

Infrared thermometers measure surface temps only. Not suitable for humans or animals.

Figure 7: Not for Human/Animal Use



Smoke Measurement

Avoid measuring through smoke—it impacts accuracy.

Figure 8: Smoke Measurement Accuracy



Glass Temperatures

For better accuracy, measure opaque material placed on the glass.

Figure 9: Measuring Glass Temperatures

6. MAINTENANCE

- **Cleaning:** Use a soft, damp cloth to clean the device casing. Do not use abrasive cleaners or solvents. Keep the lens clean and free of dust or debris.
- **Storage:** Store the thermometer in a cool, dry place away from direct sunlight and extreme

temperatures.

- **Battery Replacement:** Replace batteries when the low power indicator appears on the display. Dispose of used batteries responsibly.

7. TROUBLESHOOTING

- **No Display:** Check battery installation and ensure batteries are not depleted. Replace if necessary.
- **Inaccurate Readings:**
 - Verify the emissivity setting matches the material being measured.
 - Ensure the lens is clean.
 - Check the distance-to-spot ratio; move closer if the target is too small.
 - Avoid measuring through steam or smoke.
 - Consider performing a temperature calibration if readings are consistently off.
- **Laser Not Working:** Ensure the laser is enabled via the appropriate button. Check battery level.

8. SPECIFICATIONS

Feature	Specification
Temperature Range	-58°F to 986°F (-50°C to 530°C)
Accuracy	±1.5% or ±1.5°C (±2.7°F)
Emissivity	Adjustable 0.10 to 1.00 (Default 0.95)
Distance to Spot Ratio (D:S)	12:1
Response Time	0.5 seconds
Power Source	2 x AAA Batteries
Display Type	LCD Digital with Backlight
Special Features	MAX/MIN/AVG Hold, Auto Shut-off, Low Power Indication
Outer Material	Plastic

9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the product packaging or visit the official Elitech website. Keep your purchase receipt for warranty claims.

Manufacturer: Elitech