

MIT 320 Infrared Thermometer

User Manual



Part Number: 7603101
GTIN: 6298043998017

1

A. Introduction

This infrared thermometer is engineered for precise surface temperature measurement of hot, hazardous, or inaccessible objects ensuring safe, rapid, and non-contact operation.

The instrument integrates advanced optics, a high-sensitivity infrared temperature sensor, a signal amplifier, a digital processing circuit, and a clear LCD display. The optical system collects and focuses the infrared radiation emitted by the target surface onto the sensor, which converts this energy into a corresponding electrical signal. The amplified and processed signal is then digitized and displayed on the LCD, delivering accurate, real-time temperature readings.

B. Warnings & Cautions

1. Warnings

To prevent personal injury or hazardous situations, observe the following:

1. Inspect the plastic housing before use; if damaged, do not operate the instrument.
2. Never aim the laser directly at eyes or at reflective surfaces that could redirect the beam.
3. Do not use the instrument in environments containing explosive gases, vapors, or heavy dust.

2

2. Cautions

To avoid damage to the instrument or the measurement target, note the following:

1. Keep the unit away from strong electromagnetic fields (e.g., arc welders, induction heaters).
2. Prevent thermal shock; allow at least 30 minutes for stabilization after large or abrupt ambient temperature changes.
3. Do not place or leave the unit on or near high-temperature objects.

C. Distance to Spot size

1. D to S ratio: When measuring, note the Distance-to-Spot (D:S) ratio—As the distance increases, the spot size becomes larger. This unit offers a 12:1 D:S ratio with an integrated laser for precise targeting.

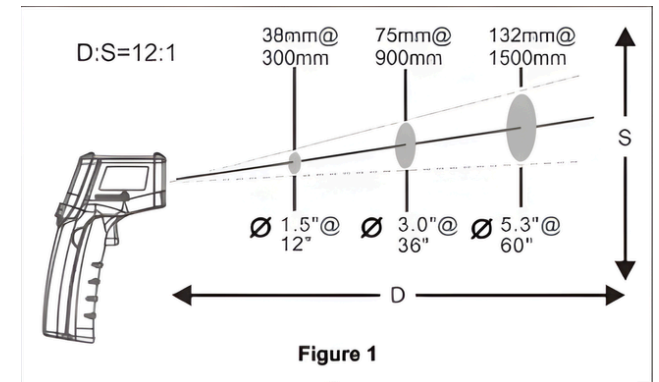


Figure 1

2. Field of View: Ensure that the target area is larger than the instrument's spot size. For smaller targets, reduce the measuring distance to maintain accuracy. When precise measurement is required, the target area should be at least twice the diameter of the spot.

3

D. Emissivity

Most organic, painted, or oxidized surfaces have an emissivity of 0.95, preset in the unit for accurate readings. Shiny metals can cause errors; apply masking tape or flat black paint and measure once it stabilizes with the material temperature.

E. Operation

1. Operating the unit:

1. Open the battery compartment and insert two 1.5 V AAA batteries. Ensure correct polarity.
2. Pull the trigger to power on.
3. Aim at the target surface and press the trigger; the temperature will appear on the LCD. The laser pointer is for aiming only and does not affect the temperature reading.

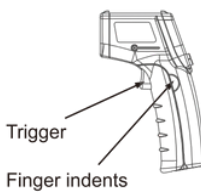


Figure 2

2. Locating a Hot Spot

To locate a hot spot, start by aiming outside the target area, then slowly scan across the surface until the highest temperature point is found.

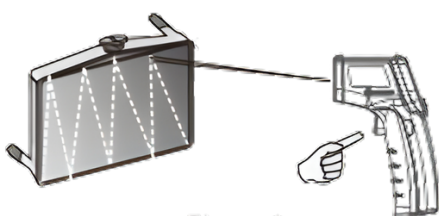


Figure 3

4

F. LCD Display & Buttons

1. LCD Display (Figure 4)

- a) Data Hold Indicator
- b) Scanning Status Icon
- c) Laser Activation Icon
- d) Backlight Status Icon
- e) Low Battery Indicator
- f) Fahrenheit (°F) Unit Display
- g) Celsius (°C) Unit Display
- h) Temperature Reading Value

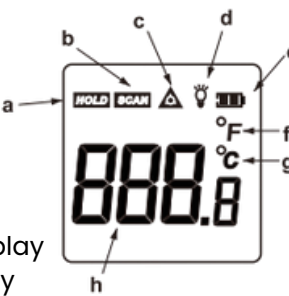


Figure 4

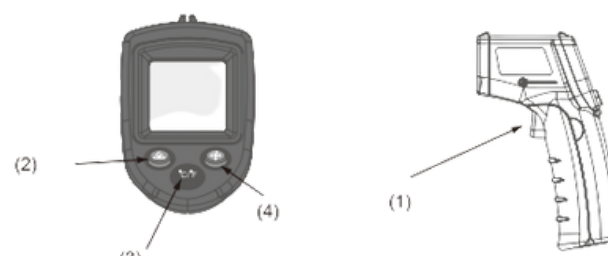


Figure 5

2. Buttons (Figure 5)

1. **Trigger:** Pull to measure; LCD shows reading with SCAN icon. Release to hold value for ~7 seconds. Includes auto power-off after 7 seconds.
2. **Laser On/Off:** Enables or disables the aiming laser.
3. **°C/°F Switch:** Toggles temperature unit between Celsius and Fahrenheit.
4. **Backlight On/Off:** Activates or deactivates LCD backlight.

5

G. Maintenance

1. Lens Cleaning

Blow off loose particles with clean compressed air. Remove any remaining debris with a soft cotton swab slightly moistened with water.

2. Case Cleaning

Wipe the case with a damp sponge or cloth and mild soap.

Notes

1. Do not use solvents on the plastic lens.
2. Do not immerse the unit in water.

H. Specification

Temperature range	-50 ~ 400°C (-58 ~ 752 F)
Accuracy	0°C~400°C (32 F~752 F): ±1.5°C (±2.7 F) or ±1.5% -50°C~0°C(-58 F~32 F): ±3°C (±5 F) Whichever is greater
Resolution	0.1°C or 0.1 F
Repeatability	1% of reading or 1°C
Response time	500 mSec, 95% response
Spectral response	5-14 um
Emissivity	0.95 Preset
Distance to Spot size	12:1
Operating Temperature	0 ~ 40°C (32 ~ 104 F)
Operating Humidity	10~90%RH non-condensing, up to 30°C(86 F)
Storage Temperature	-20 ~ 60°C (-4 ~ 140 F)
Power	1.5V AAA*2 battery
Typical battery life	Laser off: 12 hrs

Disclaimer

The manufacturer assumes no responsibility for any consequences resulting from the use or misuse of this product. Product specifications and manual content are subject to change without prior notice.

6