



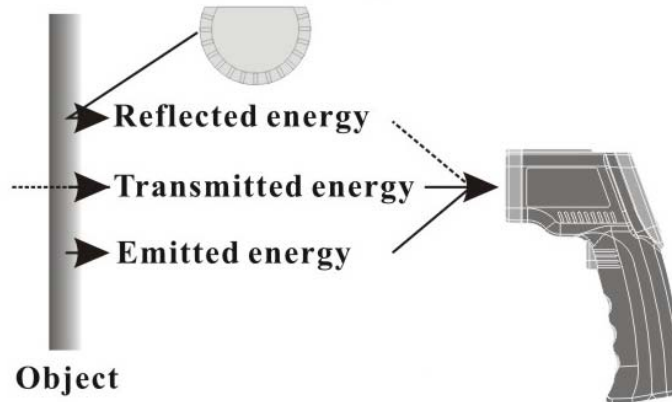
**Model: ATD-700**

**Non-contact infrared thermometer  
Instruction manual**



## INTRODUCTION

Compact, rugged and easy to use. Just aim and push the button, read current surface temperatures in less than a second. Safely measure surface temperatures of hot, hazardous or hard-to-reach objects without contact



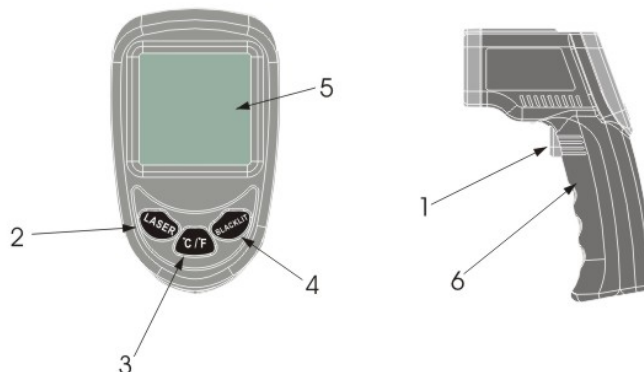
## HOW IT WORKS

Infrared thermometers measure the surface temperature of an object. The unit's optics sense emitted, reflected, and transmitted energy which is collected and focused onto a detector. The unit's electronics translate the information into a temperature reading which is displayed on the LCD. For increased ease and accuracy the laser pointer makes aiming even more precise.

## FUNCTIONS

- a. Laser indication
- b. Backlight
- c. Low battery indication
- d. Celsius/Fahrenheit selection

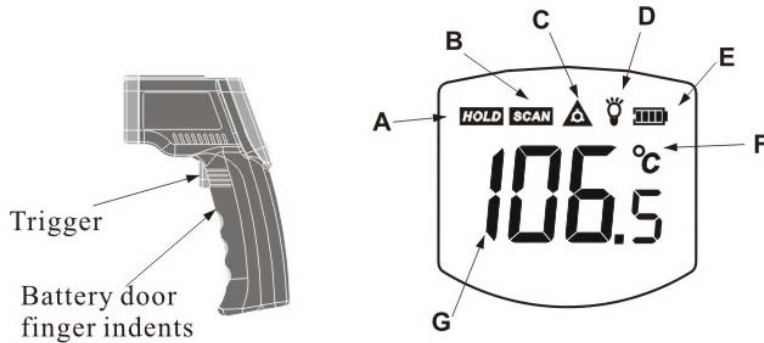
## MAIN PARTS / FUNCTION DESCRIPTION



- 1>. Measurement trigger
- 2>. Laser pointer key

- 3>. Celsius/Fahrenheit pointer key
- 4>. Backlight key
- 5>. LCD display
- 6>. Battery door

## LCD DISPLAY



- A: Data hold icon
- B: Scanning icon
- C: Laser pointer ON icon
- D: Backlight ON icon
- E: Battery power indication icon
- F: Measuring unit
- G: Measurement reading


## OPERATION


### MEASURING TEMPERATURE

Insert the 9V battery into the battery compartment, start the unit by pulling the trigger, aim the unit at the object surface to be measured, and pull the trigger to take measurement. When releasing the trigger, the SCAN symbol will disappear, the HOLD symbol will appear and you will hear an audible tone (two quick, high Beeps). The measured value will be held for 7 seconds automatically and the unit will auto power off after 20 seconds


Most organic materials and painted or oxidized surfaces have an emissivity of 0.95 (pre-set in the unit). Inaccurate readings will result from measuring shiny or polished metal

surfaces. To compensate, cover the surface to be measured with masking tape or flat black paint. Measure the tape or painted surface when the tape or painted surface reach the same temperature as the material underneath.






**Backlight:** When the backlight is pressed, every pull of the trigger will active the backlight for 10 seconds, and the BACKLIGHT symbol  will appear.

**Laser:** When the LASER is pressed, every pull of the trigger will start the laser, and the LASER symbol  will appear.

## LOW BATTERY INDICATION

The battery icon on the LCD readout will show you the state of charge on your battery. When the battery voltage is  $6.8V(\pm 0.2V)$  the icon will show the symbol:  indicating that you should replace the battery to prevent inaccurate measuring.

Battery icon shows level:

-  :battery is fully charged
-  :battery is sufficient
-  :battery is nearly deficient
-  :battery needs to be replaced
-  :battery is exhausted completely

## CAUTIONS

- 1>.Infrared thermometer should be protected from the following:
  - a. EMF(electro-magnetic fields) from arc welders, induction heaters.
  - b.Thermal shock(caused by large or abrupt ambient temperature changes. Allow 30 minutes for unit to stabilize before use).
  - c. Do not leave the unit on or near objects of high temperature.

**Warning:**

Do not point laser directly at eye or indirectly into eye off reflective surfaces.

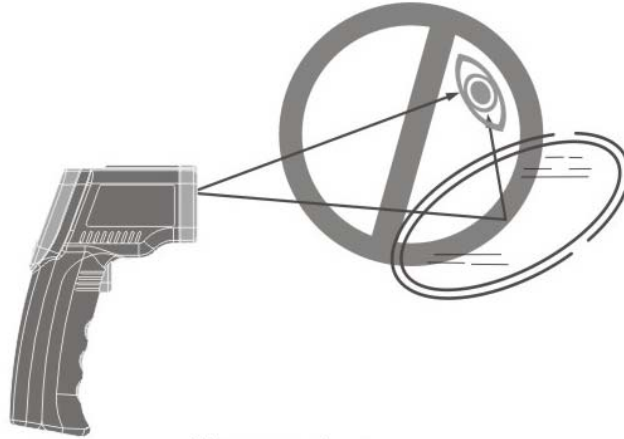


figure 1

- 2>. When taking measurement, point thermometer toward the object to be measured and hold the trigger. The object under test should be larger than the spot size calculated by the field of view diagram.
- 3>. Distance & spot size: As the distance from the object increases, the spot size of measuring area also increases.

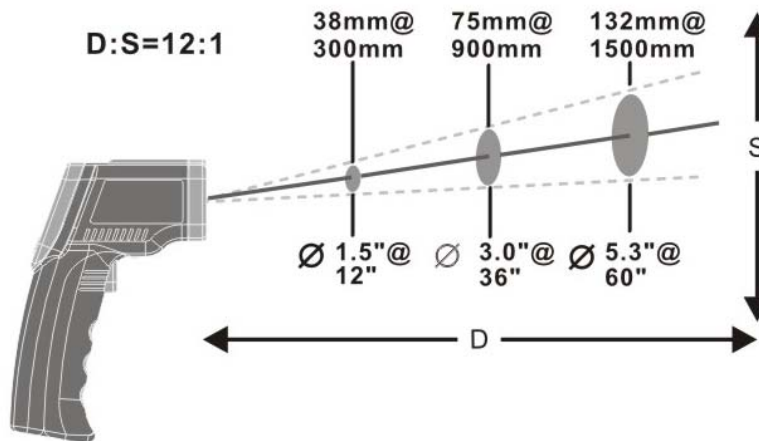


figure 2

- 4>. Field of view: Make sure the target is larger than the unit's spot size. The smaller the target the closer measure distance. When accuracy is critical, make sure the target is at least twice as large as the spot size.
- 5>. Locating a hot spot: To find a hot spot aim the thermometer outside the area of interest, then while still holding the trigger, scan across with up and down motions until you locate the hot spot. As shown in figure3:

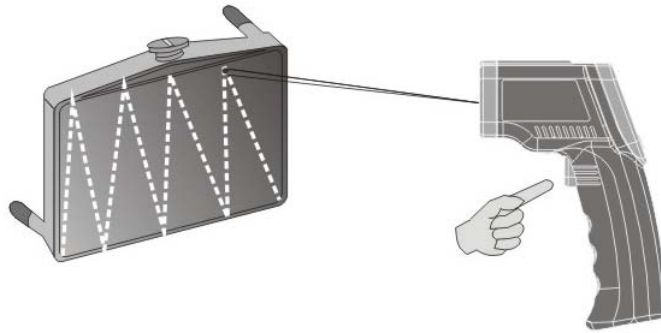


figure3

## MAINTENANCE

- 1>. Remove the battery from the unit if it is not required for extended periods of time in order to avoid damage to the unit resulting from a leaking battery.
- 2>. Do not store or use the unit where the unit may be subject to:
  - a. Splashes of water or high levels of dust.
  - b. Air with high salt or sulphur content or other gases.
  - c. High temperature or humidity or direct sunlight.
- 3>. Do not disassemble the unit or attempt internal alterations.
- 4>. Never use alcohol or thinner to clean the unit as they may melt and erode the plastic as well as the LCD readout. Clean the unit lightly as needed with a damp, clean cloth. Lens cleaning: Blow off loose particles using clean compressed air. Gently brush remaining debris away with a moist cotton cloth.

# SPECIFICATIONS

Temperature range	Infrared: -18 to 250°C (0 to 482°F);
Accuracy	Infrared: 25°C(77°F) to 250°C(482°F)±2°C or±2%; 0°C(32°F) to 25°C(77°F)±2°C or±2%; -18°C(0°F) to 0°C(32°F)±3°C which ever is greater Test temperature: 23°C ±2°C
Distance to spot size	12:1
Repeatability	1% of reading or ±1°C
Response time	500ms
Spectral response	8~14 um
Emissivity	Pre-set 0.95
Operating conditions	Temperature: 0~ 40°C Humidity: 10~95%RH noncondensing
Storage conditions	Temperature: -20~60°C Humidity: ≤ 85%RH, without battery
Low battery indication	6.8V ± 0.2V
Power supply	9V Alkaline or NiCd battery
Battery life	Laser models: 12 hrs
Product size	146x80x38mm
Product weight	130g (without battery)

**Warning:** This product contains chemicals, including lead, known to the State of California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.

