

# Wide Range Mini Infrared Thermometer

## Instruction Manual



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# 1. Product Introduction

Thank you for purchasing this infrared thermometer. The Infrared Thermometer is a non-contact infrared temperature measuring instrument. To measure a temperature, point the unit at the object until the temperature is read, pull the measuring trigger and hold. Make sure the target area is larger than the unit's spot size. For large objects assure you are within target distance.

## 1-1 Features

- Easy emissivity adjustment for measuring.
- Temperature range of  $-35\sim 630^{\circ}\text{C}$  ( $-31\sim 1166^{\circ}\text{F}$ ) covers most industrial and residential application.
- Mini, compact and easy to carry.
- MIN, MAX, AVG functions help you quickly identifies problems.

## 1-2 Applications

- Electrical troubleshooting.
- Automotive repair and maintenance.
- Air conditioner.
- Science experiment.
- Manufacturing processes of semiconductor technology.
- Food safety and processing.
- Perform HVAC energy audits.

## 2. Safety Information

Read the following safety information carefully before attempting to operate or service the meter. Only qualified personnel should perform repairs or servicing not covered in this manual.

Laser Warning Note!

 Do not point laser directly at eye. Use cautions a round reflective surface. Keep out of reach of children.

### 2-1 Cautions!

- DO NOT submerge the unit in water.
- This product is not designed for use in medical evaluations. The product can only be used to measure body temperature simply for reference. They are meant for industrial and scientific purposes.

### 2-2 Safety Symbols



Dangerous, refer to this manual before using the meter.



CE Certification.

This instrument conforms to the following standards:

**EN61326:** Electrical equipment for measurement, control and laboratory use.

**IEC61000-4-2:** Electrostatic discharge immunity test.

**IEC61000-4-3:** Radiated, radio-frequency, electromagnetic field immunity test.

**IEC61000-4-8:** Power frequency magnetic field immunity test.

Tests were conducted using a frequency range of 80-1000MHz with the instrument in three orientations. The average error for the three orientations is  $\pm 0.5^{\circ}\text{C}$  ( $\pm 1.0^{\circ}\text{F}$ ) at 3V/m throughout the spectrum. However, between 300-530MHz at 3V/m, the instrument may not meet its stated accuracy.

**RoHS** Restrict to use of six substances within electrical and electronic equipment (EEE), thereby contributing to the protection of human health and the environment.



The device may not be disposed in with the trash. It promotes the re-use recycling and other forms of recovery of used materials and components, and to improve the environmental performance of all operators (manufacturers, traders and treatment facilities) involved in the life cycle of products. Dispose of the product appropriately in accordance with the regulations in force in your country.

## **REACH (SVHC)**

The device of used materials content no substances that list of proposed REACH substances of very high concern.

### 3. Specification

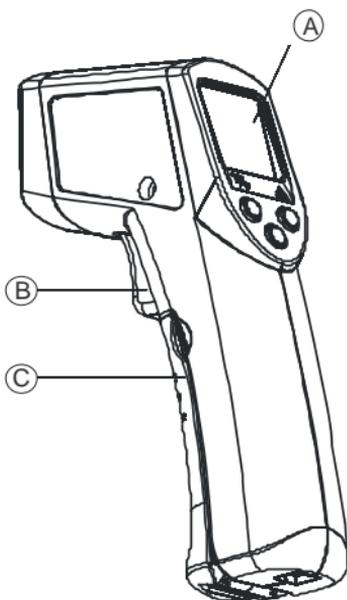
Distance/Spot Ratio	12 : 1
Temperature Range	-35~630°C (-31~1166°F)
Accuracy (Assumes Operation Ambient Temperature of 25°C/77°F)	±2.5°C (±4.5°F) From -35~0°C (-31~32°F) ±1.5°C (±2.7°F) From 0~100°C (32~212°F) ±2% From 100~630°C (212~1166°F)
Sensor	Thermopile (5~14 μm)
Repeatability	±1°C / 2°F
Resolution	0.1°C / 0.1°F
Response Time	500 ms
Operation Temp.	0~50°C ( 32~122°F), 10~90% RH
Auto Power Off	Automatically after approx. 6 sec.
Emissivity	0.30 / 0.70 / 0.95
10 Point Memory	YES
°C/°F Switchable	YES
Backlight	YES
Laser Sight Switchable	YES
Max/Min/Avg.	YES
Dimensions (LxWxH)	156 x 100 x 32 mm (6.14" x 3.95" x 1.26")
Weight	Approx. 136 g (4.8 oz.)
Accessory	9V Battery · Instruction manual

## 4. Operation Instructions

### 4-1 Quick Start

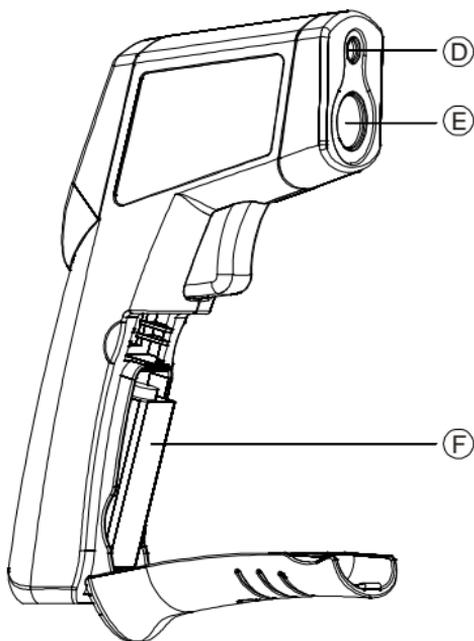
To measure a temperature, point the unit at the target you want to measure, pull the trigger and hold. Be sure to consider the target area inside the angle of vision of this instrument. The single spot of laser is used for aiming only.

### 4-2 Unit diagram



- A. Display Screen
- B. Measuring Trigger
- C. Battery Cover

- The unit is powered by 9V battery. The User has to replace the battery when the battery voltage drops below the voltage for reliable operation and at the same time the battery symbol  will appear.



D. Laser Sighting

E. Measuring Window

F. 9V Battery

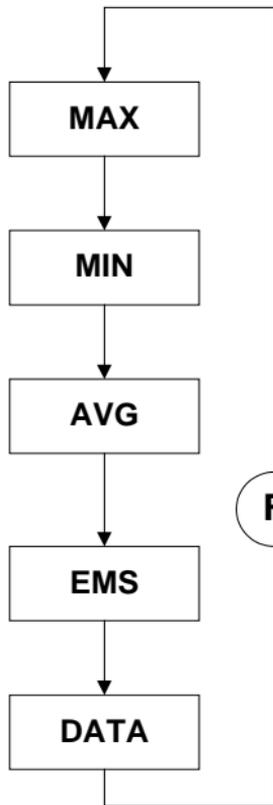
## LCD & CONTROL PANEL



- |                            |                      |
|----------------------------|----------------------|
| 1. Battery Low             | 7. Scan/Hold         |
| 2. Laser On/Off Indication | 8. °C/°F Indication  |
| 3. Primary Display         | 9. Secondary Display |
| 4. MAX/MIN                 | 10. Up Button        |
| 5. AVG                     | 11. Function Key     |
| 6. Down Button             |                      |

### 4-3 Advance Function

To operate more advance functions, it is simply by using “F” button to change. The sequential operations and the corresponding explanations are shown in the following flow-chart.



- The maximum temperature within one shot measuring.
- The minimum temperature within one shot measuring.
- The average temperature within one shot measuring.
- Easy emissivity adjustment (0.30/0.70/0.95) for different materials.
- Recall the stored data number by using ▲ button. After the data number is located, recall its Temperature Reading/Max/Min/Avg/EMS by using ▼ button.

## 4-4 Operation Notes

**Scan/Hold** : In SCAN mode, the LCD displays both the current temperature in Celsius or Fahrenheit. The unit will HOLD the last reading for 6 seconds after the trigger is released. When the battery is low, the battery icon shows, but the unit will continue to function.

**Memory** : In SCAN mode, the data will be memorized after the trigger is released.

**°C/ °F switch** : In SCAN mode, released the trigger and push the ▼ button.

**Laser switch** : In SCAN mode, released the trigger and push the ▲ button.

## 5. Emissivity

Different surface of material may gives different reading even at the same temperature. This unit provides the “emissivity” adjustment function for the user to get more correct reading. Emissivity is the ability of an object to emit or absorb energy. Perfect emitters have an emissivity of 1, emitting 100% of incident energy. An object with an emissivity of 0.8 will absorb 80% and reflect 20% of the incident energy. Emissivity is defined as the ratio of the energy radiated by an object at a given temperature to the energy emitted by a perfect radiator at the same temperature. All values of emissivity fall between 0.0 and 1.0.

## **6. Maintenance**

### **Cleaning the lens:**

Blow off loose particles using clean compressed air. Gently brush remaining debris away with a camel's hair brush. Carefully wipe the surface with a moist cotton swab. The swab may be moistened with water.

### **Note:**

DO NOT use solvents to clean the lens.

### **Cleaning the housing:**

Use soap and water on a damp sponge or soft cloth.