

# MINI-INFRARED THERMOMETER

USER'S MANUAL



## 1 Introduction

This meter is a convenient non-contact infrared thermometer with the functions of laser targeting, back light, data hold and auto power off etc.

## 2 Safety Information

- Please read the following information carefully before using the meter.
- Do not clean the meter using solvents.



**Warning: Do not point laser directly at eye or reflective surfaces.**

## **Cautions:**

**When** ambient temperature changes quickly, must wait 30 minutes to balance the heat of the instrument before use.

**Avoiding** EMF(electro magnetic fields) from arc weld, induction furnace, etc...

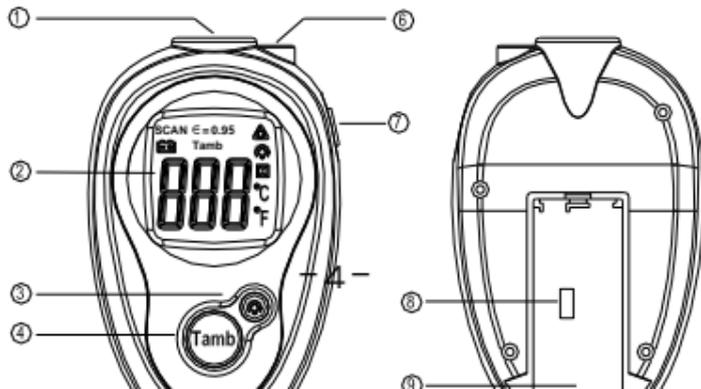
**Do** not leave the unit on or near high temperature objects.

**Keeping** the instrument clean, and do not get dust into detecting hole.

## **3 Name of Components**

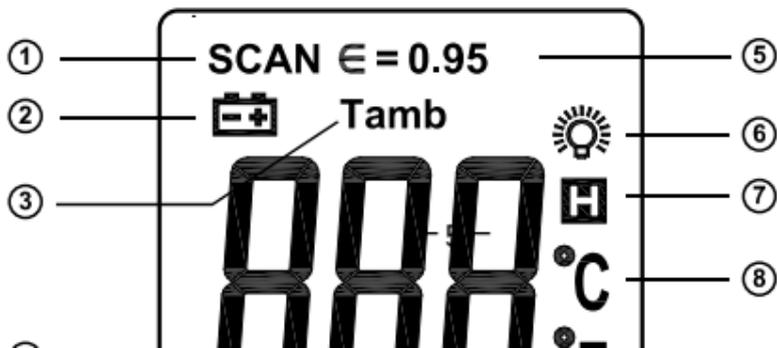
- ① Infrared sensor
- ② LCD display

- ③ Back light button
- ④ Ambient temperature measurement button
- ⑤ Wrist band
- ⑥ Laser targeting aperture
- ⑦ Scan button (Measurement and laser button)
- ⑧ °C/°F selection switch
- ⑨ Battery cover



## LCD display

- ① Measurement indication
- ② Low power indication
- ③ Ambient temperature measurement indication



- ④ Measurement result
- ⑤ Emissivity display
- ⑥ Back light indication
- ⑦ Data hold indication
- ⑧ °C temperature unit
- ⑨ °F temperature unit

## **4 Specifications**

Measurement range: -20°C ~ 270°C; -4°F ~ 518°F

Accuracy at ambient of  $22^{\circ}\text{C} \pm 2^{\circ}\text{C}$ :  $\pm(2\% \text{ reading} + 3^{\circ}\text{C}/6^{\circ}\text{F})$

Ambient temperature measurement range:  $0^{\circ}\text{C} \sim 50^{\circ}\text{C}$

Resolution:  $1^{\circ}\text{C}/1^{\circ}\text{F}$

Emissivity: 0.95

Field of view: 6:1

Laser power:  $<1\text{mW}$

Over range indication: "OL" or "-OL"

Auto power off: 20s

## **5 Measurement Principle**

Non-contact Thermometer detects the infrared ray of the object, the instrument focalizes infrared energy of the object onto a sensor

through a lens, transfers the surface temperature into electric signal. A microcomputer calculates and displays the measurement temperature on the LCD. The method can measure object's surface temperature without contact. The laser is used to aim target only.

## **6 Operation Instruction**

### **6-1. To measure an object's temperature**

- ① Point the infrared sensor to the object, and then press the "SCAN" button, the unit begins working, and the laser appears.
- ② Read the measured result from the LCD display.
- ③ Release the "SCAN" button, the measured result will hold automatically. Unit automatically turns off after about 20 seconds of

inactivity.

To get an accurate measurement result, refer to **D:S ratio, Emissivity** section.

6-2 To measure the ambient temperature  
(Please balance the heat of the instrument before use.)

- ① Press the “SCAN” button to start the unit.
- ② Press the “Tamb” button to select the ambient temperature measurement mode, and the sign of “Tamb” will appear on LCD, then press the “SCAN” button, the measured ambient temperature will be displayed on LCD.
- ③ Release the “SCAN” button, the measured result will hold

automatically. Unit automatically turns off after about 20 seconds of inactivity.

④ To continue measuring an object's temperature, press the "Tamb" button again, the sign "Tamb" will disappear from LCD, and then follow the step 6-1 (①→③).

**Note: When the symbol "Tamb" appears, the measurement for object temperature is not available.**

**NOTE:**

If an object surface is very slick, such as stainless steels, the emissivity from surface is low, and the measurement accuracy will be affected. An effective solution is that using the black adhesive

tape to cover the object surface, starting the measurement until the adhesive tape's temperature is same as the object.



**Warning: Do not point laser directly at eye or indirectly off reflective surfaces.**

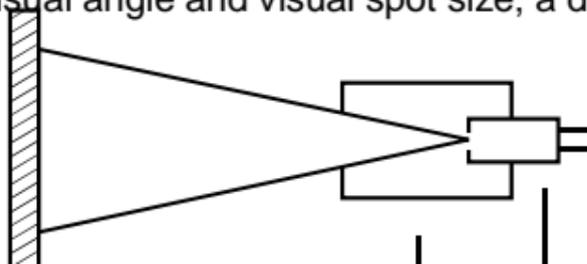
## Other functions

**Back light:** Press the  key to start the backlight.

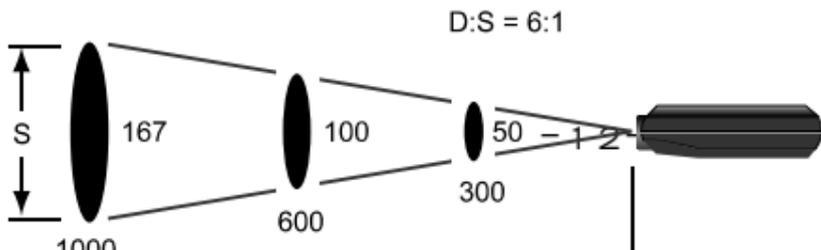
**Measurement unit (°C/°F) selection:** Open the battery cover and take the battery out, shift the switch to select the measurement unit.

## 7 D:S ratio

The thermometer has a visual angle and visual spot size; a drawing is shown as following:



Make sure that the target is larger than the unit's visual spot size. The smaller the target, the closer you should be to it. The relationship between distance and spot size is 6:1, the drawing as following:



## 8 Replace batteries

If the sign “” appears on the LCD display, it indicates that battery should be replaced. Remove the battery cover, and replace the exhausted batteries with new ones.

