

Infrared Thermometer



User
Manual

HYS005872

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I. Safety information

- Please read the following information carefully before using the meter.
- Do not clear the meter using solvents.
- Safety symbols:
 - ⚠ Important information prompt for danger.
 - CE Comply with European CE safety standards.

This instrument is compatible with the following standards:

- EN61326-1
- EN61010-1
- EN60825-1

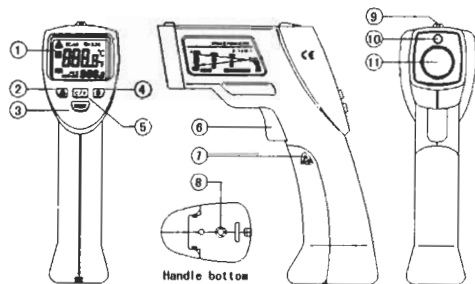
⚠ Warning

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

II. Cautions

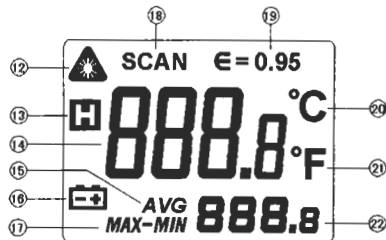
- ◆ When ambient temperature changes quickly, must wait 30 minutes to balance the the heat of the instrument before use.
- ◆ Avoid EMF(electro magnetic fields) from arc weld, induction furnace, ect...
- ◆ Do not leave the unit on or near high temperature objects.
- ◆ Keep the instrument clean, and do not get dust into detecting hole.

III. Explanation on parts



- | | |
|-----------------------------|----------------------------|
| 1. LCD | 2. Laser button |
| 3. Mode button | 4. Backlight button |
| 5. °C/°F button | 6. Trigger |
| 7. Battery cover | 8. Tripod nut |
| 9. Collimator | 10. Laser emission orifice |
| 11. Temperature detect hole | |

IV. LCD illustration



- 12. Laser emission indicator
- 13. Holding indicator
- 14. First temperature show
- 15. Average value indicator
- 16. Low power indicator
- 17. MAX/MIN indicator
- 18. Measurement indicator
- 19. Emissivity display
- 20. °C temperature unit
- 21. °F temperature unit
- 22. Second temperature show

V. Measurement principle

Noncontact Thermometer detects the infrared ray that an object emits, The instrument focalizes infrared energy of the object onto a sensor through a lens, changes 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.

VI. Measurement method

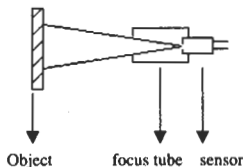
1. To measure the temperature of an object, point the unit at it, press the trigger down and keep, you can measure the temperature continuously. After releasing trigger, LCD will hold the result of measurement. The first temperature indicates the current measurement value; the second temperature indicates the calculated value. To get an accurate measurement result, refer to D:S ratio, Emissivity sections. The instrument will turn off after releasing trigger for 10 seconds.
2. When an object is far from the thermometer, by pressing

laser button to light the laser to aim at object.

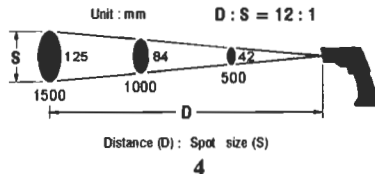
3. To measure in the night, by pressing backlight button to light the backlight.
4. By pressing "MODE" button to change the mode of the second temperature, it can show AVG(average) MAX(maximum), MIN(minimum), MAX-MIN.
5. By pressing °C/°F button to choose °C or °F temperature unit to show temperature.

VII. D:S ratio

The thermometer has a visual angle and visual spot size, a drawing shows it 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 12:1, the drawing as following:



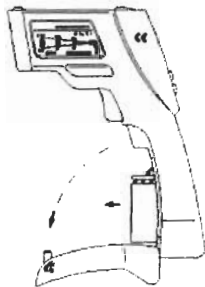
To prevent the infrared of other object from entering thermometer, you had better be closer to object than the distance calculated by ratio D:S=12:1.

VI. Emissivity

Emissivity is used to describe the energy emitting characteristic of materials. The greater the emissivity, the stronger the emission capacity of the object is. Most organic materials and oxidized metal surfaces have a emissivity between 0.85 to 0.98. The thermometer is designed according to that emissivity equals 0.95. When the Emissivity of an object is less than 0.95, the measurement temperature is less than the actual temperature; and the emissivity of an object is more than 0.95, the measurement temperature is more than the fact temperature. A shiny metal or a polished object surface has a low emissivity. Please pay attention to the effect of emissivity of objects.

IX. Changing the battery

When the battery voltage is lower, the battery symbol appears, it indicates that we must change the battery. Pinch OPEN characters on the battery cover, then pull it and can change a new battery. See the drawing as right:



X. Specifications

LCD display: double temperature 4 digitals LCD

D:S: 12:1

Emissivity: 0.95

Spectral response: 8-14 um

Measure range: -20°C~537°C or -4°F~999°F

Accuracy: -20°C~50°C ±2.5°C,
51°C~537°C ±(reading * 1.5%+1°C)

Response time: 0.5 second

Laser power: less than 1 mw

Automatic turn off: hold for 10 seconds

Backlight: kelly

operation surrounding: 0~40°C,10~90%RH

Storage surrounding: -10°C~60°C, ≤75%RH

Battery: 9V 6F22

Size: Long 162*Width 56*high 190mm

Weight: approximately 267g(including battery)

Accessories: battery 9V, operation manual, bag

The longest measuring distance : 12 meters