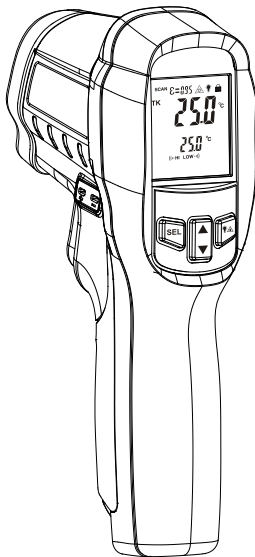




Dual Laser Infrared Thermometer

User's Manual



Please read this user manual thoroughly before using the unit and keep safe for future reference.

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1. Introduction

This dual laser infrared thermometer provides fast, easy and accurate temperature readings. With the non-contact (IR) and contact (TK) technology, the thermometer can be used to measure the surface temperature of hard-to-reach objects like electrified equipment or moving objects, without any damage to the object being measured or any injury to the user.

2. Application

These units are widely used in food preparation, safety and fire inspection, plastic molding, asphalt, marine, printing ink, dryer temperature and fleet maintenance.

3. Safety

- ◆ Use extreme caution when the laser beam is turned on.
- ◆ Do not point the beam towards human or animal eyes.
- ◆ Do not allow the beam to strike the eye from a reflective surface.
- ◆ Do not use the laser near explosive gases.



CE EMC compliant

4. Features

- ◆ Fast and easy measurement
- ◆ Precise IR and TK temperature measurement
- ◆ Built-in dual laser pointers increase the target accuracy
- ◆ Adjustable emissivity: 0.1 ~ 1.0
- ◆ °C/°F selection
- ◆ MAX, MIN, DIF, AVG record
- ◆ REC datalogger function for 12 points
- ◆ LCD display with backlight
- ◆ Resolution 0.1°C/F
- ◆ Trigger lock
- ◆ Adjustable high/low alarm
- ◆ Automatic range selection
- ◆ Automatic data hold function
- ◆ Automatic power off

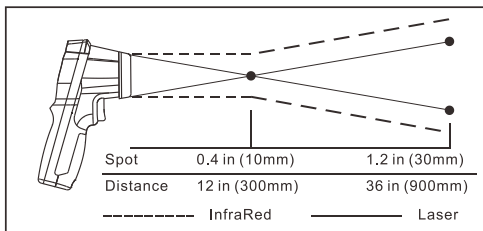
5. Field of View

The meter's field of view, or “Distance to Spot” indicates the distance required from the target spot. For example, where field of view is 30:1, the meter should be 30 inches from the target spot. The diameter of the target must be at least 1 inch.

Ensure target is larger than unit's spot size. The smaller the target, the closer the unit should be. Where accuracy is critical, ensure target is at least twice as large as the spot size.

Other distance ratios are show as Fig. 1 in the field of view diagram.

$D:S=30:1$

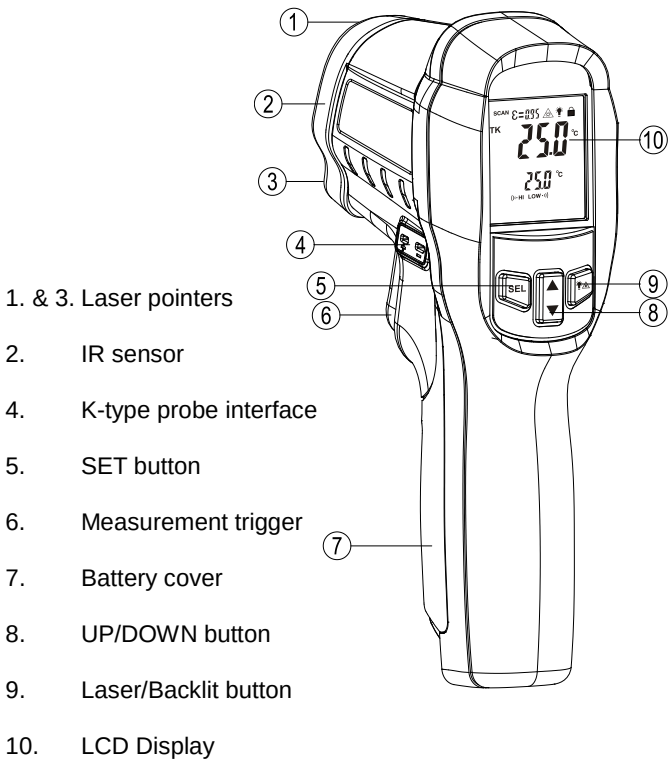


(Fig: 1)

6. Specifications:

IR Range:	38/705/0: -50 to +500°C / -58 to 932°F 38/706/0: -50 to +1050°C / -58 to 1922°F
TK Range:	-50 to +1370°C / -58 to 2498°F
IR Accuracy:	-50 to 0°C: +/-4°C/7°F 0 to +500°C/F: +/-1.5% rdg, +/-2°C/3.6°F Above +500°C/F: +/-2% rdg, +/-2°C/3.6°F
TK Accuracy:	-50 to +1370°C/F: +/-1.5% rdg, +/-1°C/1.8°F
Distance to Spot:	38/705/0: 13:1 38/706/0: 30:1
Emissivity:	Adjustable: 0.10 to 1.0
Resolution:	0.1°C/F < 1000, 1.0°C/F < 1000
Response Time:	< 250 ms
Spectral Response:	8 to 14 μ m
Over Range Indication:	LO, HI
Polarity Display:	Auto display “-“ indicates negative No sign indicates positive
Diode Laser:	Output <1mW, 630 to 670nm, class 2 (II)
Auto Power Off:	After 35 seconds inactivity
Operating Temperature:	0 to +50°C / 32 to 122°F
Storage Temperature:	-20 to +60°C / -4 to 140°F
Relative Humidity:	Operating: 10 to 95 %RH Storage: <80%RH
Power Supply:	9V Battery
Weight/Dimensions:	275g /192 x 97 x 59mm

7. Meter Description



8. LCD Display Description

1. Measurement icon

2. Emissivity icon

3. Laser icon

4. Backlit icon

5. Trigger lock

6. °C/F icons

7. DIF icon

8. AVG icon

9. MIN icon

10. Temp. values for the MAX, MIN, DIF, AVG, HAL, LAL. & REC

11. Low battery icon

12. Low alarm set

13. Low alarm icon

14. High alarm icon

15. High alarm set

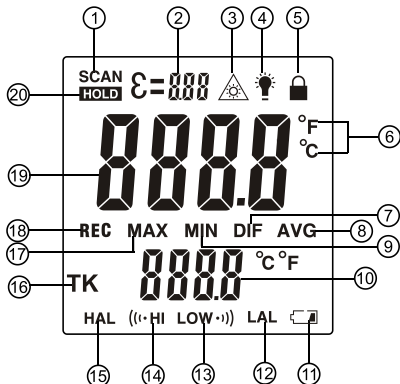
16. Type-K temperature icon

17. MAX icon

18. Data record icon

19. Current temperature value

20. Data hold icon



9. Operating Instruction

9.1 Operating steps:

1. Hold the meter by its handle grip and point it towards the surface to be measured.
2. Pull and hold the trigger to turn the meter on, the "SCAN" icon will appear and testing will begin.
3. The surface temperature being tested will be displayed on the LCD screen.
4. Release the trigger, the "HOLD" icon will appear, and the reading will be held for several seconds.
5. The meter will automatically shut off after 35 seconds.

Measurement Note: If the meter is to be used where the ambient temperature has changed dramatically, wait at least 30 minutes for unit to adjust to new temperature.

The laser is designed for aiming only; it can be shut off while operating in short distances to save the battery.

9.2 Button Function

9.2.1 UP/DOWN button

1. In measurement mode, press button “” to switch the temperature units between °C and °F.
2. In REC mode, press button “” to review the latest 12 record readings.

9.2.2 Laser/Backlit button

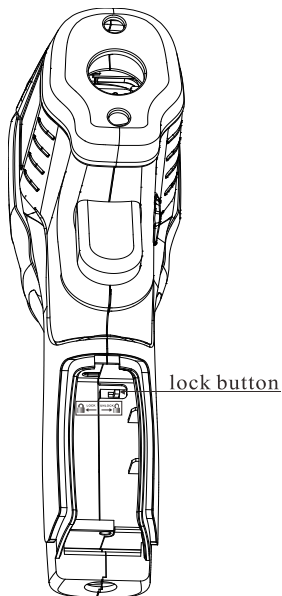
1. In measurement mode, press button “” to turn laser pointer on or off.
2. In “HOLD” mode, press button “” to turn back light on or off.
3. In measurement mode, keep pressing button “” to select IR or TK temperature measurement.

9.2.3 SEL Button

1. When meter first powered on, press “” to review REC, MAX, MIN, DIF, AVG, HI/LO alarm values and TK measurement.
2. To change emissivity, press and hold “” button until the “” icon flashes on the screen, press button “” to adjust emissivity value. Hold “” button to return to normal measurement mode. (After entering into emissivity mode, briefly press button “” to set the High/Low alarm value.)

9.2.4 LOCK Button

The meter can be locked for continuous measurement by sliding the switch inside the battery compartment to the LOCK position. When measurement completed, slide the switch to the UNLOCK position. (The trigger button will not work while continuous measurement is locked.)

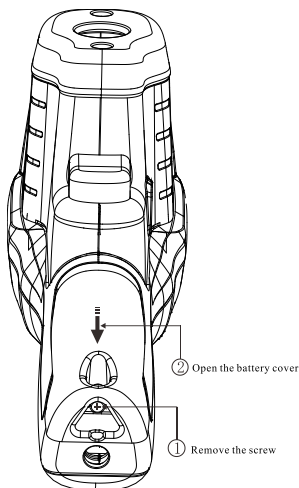


9.3. Battery Replacement

When the low battery icon“  ” appears, replace the meter's battery.

Use a small screwdriver to remove the securing screw at the base of the unit to remove the battery cover. Attached the battery connector to the terminals of a suitable 9V battery and replace the cover and screw.

Remove the battery when the meter is to be stored for long periods of time to avoid battery leakage and possible damage to the meter.



10. Notes

10.1 Work Principle

The infrared thermometer is designed for measuring surface temperature of an object.

The optical sensor can emit, reflect and transmit energy, which is collected and focused on a detector, which is translated into the temperature reading displayed on the LCD screen.

The laser is used for target aiming only.

10.2 Field of View

The object under test should be larger than the spot size calculated by the field of view diagram.

The smaller the target object is, the closer the meter should be to it for accurate measuring.

When accuracy is critical, ensure the target is at least twice as large as the spot size.

10.3 Distance & Spot Size

As distance (D) from the object increases, the spot size (S) of the area measured by the unit becomes larger.

10.4 Locating a hot spot

To find a hot spot, first aim the thermometer to the outside of target area, then scan across in an up and down motion until the hot spot is located.

10.5 Notice

Not recommend for measuring shiny or polished metal surfaces like stainless steel, aluminum, etc.

Do not take measurements through a transparent surface such as glass.

Ensure surface under test is clear of frost, oil, grime, etc., before taking measurement.

10.6 Maintenance

This meter contains no user serviceable parts, repairs should be carried out by qualified personnel.

Do not use volatile liquids to clean the unit, wipe with dry soft cloth. Do not immerse it in water. Do not store it in high temperature or humidity.

10.7 Emissivity

Most (90%) organic materials and painted or oxidized surfaces have an emissivity of 0.95 (pre-set in the unit).

11. Accessories

User's Manual

9V Battery

Type-K probe

Hook

Carrying pouch with gift box

Emissivity Table

Substance	Thermal emissivity	Substance	Thermal emissivity
Aluminium	0.30	Glass	0.90 to 0.95
Asphalt	0.95	Iron oxides	0.78 to 0.82
Concrete	0.95	Lacquer	0.80 to 0.95
Leather	0.95	Plastic	0.85 to 0.95
Ceramic	0.95	Paper	0.70 to 0.94
Copper	0.50	Sand	0.90
Brick	0.90	Rubber	0.95
Carbon	0.85	Timber	0.94
Fatlute	0.94	Textiles	0.94
Frozen food	0.90	Lead	0.50
Hot food	0.93	Marble	0.94
Ice	0.98	Cloth (black)	0.98
Snow	0.90	Plaster	0.8 to 0.90
Human skin	0.98	Water	0.93



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