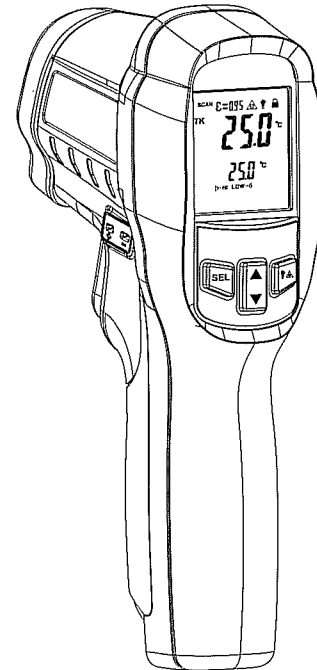# User's Manual

Infrared Thermometer

Please read this user's manual thoroughly before using this unit

and keep it properly for your future reference.

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 0to 0.90
Human skin	0.98	Water	0.93

◆ 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

①User's Manual

②9V Battery

③Type-K probe

④Hook

⑤Carrying pouch with gift box

Contents

1. Introduction

Congratulations on your purchase of our professional non-contact

infrared thermometers with Type-K input measurement.

These units can provide fast, easy and accurate temperature

readings. With the non-contact (IR) and contact (TK) technology,

they can be used to measure the surface temperature of

hard-to-reach objects like electrified equipment or moving objects,

without any damage to them.

◆ 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.

◆ No not make measurement through transparent surface such as

glass.

◆ If the surface of the object under test is covered with frost, oil,

grime, etc., clean it before taking measurement.

10.6 Maintenance

◆ Do not use volatile liquids to clean the unit, wipe it with dry

soft cloth.

◆ Do not disassemble the unit, repair it   by qualified personnel

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, then translate it into the temperature reading by electronics and displayed on the LCD screen.

◆ The laser is used for aiming the target object 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, make sure the target is at least twice as large as the spot size.

10.3 Distance & Spot Size

2. Features

◆ Fast and easy measurement

◆ Precise IR and TK temperature measurement

◆ Built-in dual laser pointers increase the target accuracy

◆ Adjustable emissivity: $0.1 \sim 1.0$

◆ °C/°F selection

◆ MAX, MIN, DIF, AVG record

◆REC datalogger function for 12 points

◆ LCD display with backlight

◆ Resolution 0.1℃/°F

◆ Trigger lock

◆ Adjustable High/Low alarm

◆ Automatic range selection

◆ Automatic data hold function

◆ Automatic power off

3. Application

This units can be widely used in Food preparation, Safety and Fire

inspection, Plastic molding, Asphalt, Marine, Printing ink, dryer

temperature and Fleet maintenance.

4. Safety

◆ Use extreme caution when the laser beam is turned on.

◆ Do not point the beam toward 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.

CAUTION
Don't target human and animal eyes
WAVELENGTH 630-670nm OUTPUT:<1mW CLASS II LASER PRODUCT EN 60825-1:1994/A11:1996/A2:2001/A1:2002

9.3. Battery Replacement

9.3.1 When the low battery icon " 🔋 " appears, replace the meter's battery.

9.3.2 Open the battery cover, replace the 9V battery and close the cover.

② Open the battery cover

① Remove the screw
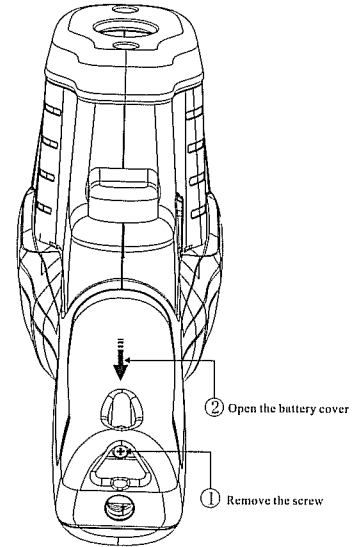
② After power on the meter, keep pressing button"[SEL]" until "Ɛ"icon flashes on the screen, then loose button"[SEL]", enter into Emissivity Mode, press button"[▲▼]" to adjust emissivity value, then keep pressing button"[SEL]" return to the normal measurement mode. (After entering into Emissivity Mode, momentarily press button "[SEL]" can set the High/Low alarm value).
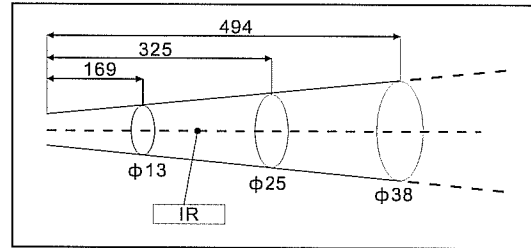
9.2.4 LOCK Button

After power on the meter, lock the unit on for continuous measurement by sliding the switch to right LOCK position. After finish the measurement, slide the switch to left UNLOCK position.(After entering into continuous measurement, the trigger button will not work.)

lock button
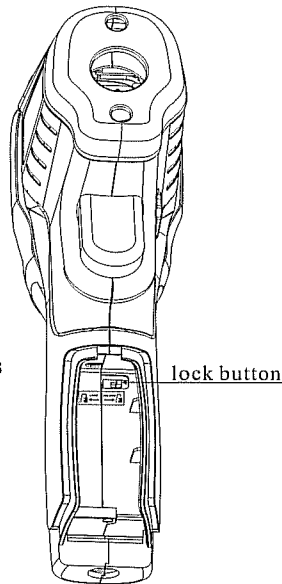
5. Field of View

The meter's field of view is 13:1, for example, if the meter is 13 inches from the target spot, the diameter of the target must be at least 1 inch. Other distance ratios are show as Fig. 1 in the field of view diagram.

（Fig: 1 ）

6. Specifications

Range	IR:-50～500℃/-58～932℉
	TK: -50～1370℃/-58～2498℉
Accuracy	IR:-50～0℃/-58～32℉：±4℃/7.2℉
	IR:0～500℃/32～932℉：±1.5%±2℃/3.6℉
	TK:-50～1370℃/-58～2498℉：±1.5%±1℃/1.8℉
D:S	13:1
Emissivity	Adjustable: 0.10～1.0
Resolution	0.1℃(0.1℉) < 1000 ， 1℃(1℉) > 1000
Response Time	< 250 ms
Spectral Response	8～14um
Over range indication	LO	HI
Polarity Display	Auto display, "-" indicates negative, while positive with no sign.
Diode Laser	Output＜1mW，630～670nm, class 2(Ⅱ)
Automatic Power Off	Meter shuts off automatically after 35 seconds
Operating Temp.	0℃～50℃/32℉～122℉
Storage Temp.	-20℃～60℃/-4℉～140℉

9.2 Button Function

9.2.1 UP/DOWN button

① In Measurement Mode, press button"▲▼"to switch the temperature unit ℃ or ℉.

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 on/off laser pointer, In "HOLD" Mode，press button "🔦△" to turn on/off backlight.

② In Measurement Mode, keep pressing button "🔦△" to select IR temperature measurement or TK temperature measurement.

9.2.3 SEL Button

① After power on the meter, press button"SEL"to review REC, MAX, MIN, DIF, AVG, High/Low Alarm values and TK measurement.

9. Operating Instruction

9.1 Operating steps:

① Hold the meter by its handle grip and point it toward the surface to be measured.

② Pull and hold the Trigger to turn the meter on, the "SCAN" icon will appear and begin testing.

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 used in an ambient temperature with wide temperature change, awaiting it at least 30 minutes to adjust it.
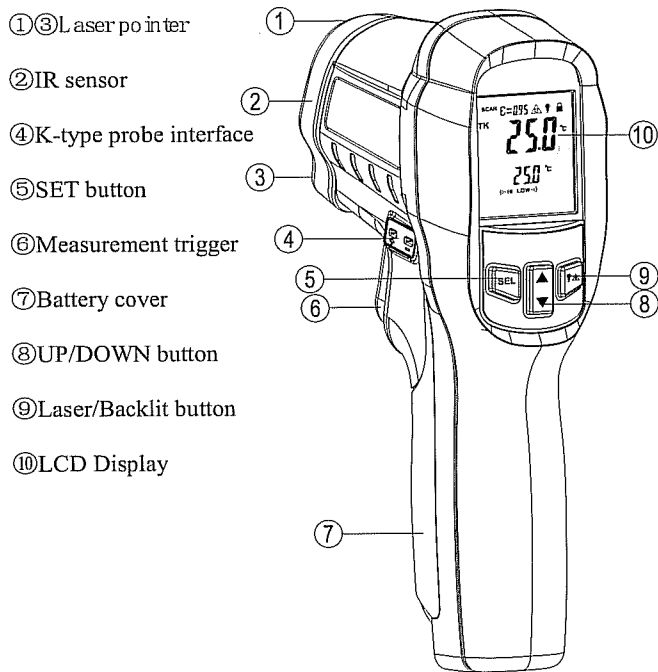
The laser is designed for aiming only; it can be shut off while operating in short distance to save the battery.

Relative Humidity	Operating: 10~95%RH; Storage: <80%RH
Power Supply	9V battery
Weight	275g
Dimensions(L*W*H)	95*83*192mm
Safety	" $C \in$ " Comply with EMC

Notes:

◆Accuracy can be ensured while the temperature is at 18℃～28℃(64℉～82℉) and humidity is less than 80 % RH.

◆**Field of View:** Make sure that the target is larger than the unit's spot size. The smaller the target, the closer you should be to it. When accuracy is critical, make sure the target is at least twice as large as the spot size.

7. Meter Description

①③Laser pointer

②IR sensor

④K-type probe interface

⑤SET button

⑥Measurement trigger

⑦Battery cover

⑧UP/DOWN button

⑨Laser/Backlit button

⑩LCD Display

8. LCD Display Description

① Measurement Icon

② Emissivity Icon

③ Laser Icon

④ Backlit Icon

⑤ Trigger Lock

⑥ ℃/℉ Icon

⑦ DIF Icon

⑧ AVG Icon

⑨ MIN Icon

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