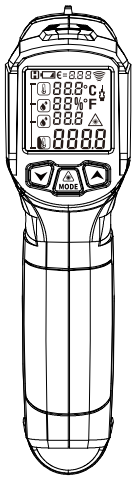
INFRARED THERMOMETER
INSTRUCTION MANUAL



125X85mm

I.Safety information

Please read the manual carefully before using the thermometer.

- Do not use solvents to clean the thermometer.
- Safety icons:

⚠ Warning of Danger

CE Comply with European CE safety regulations

This unit meets the following standards:

■ EN60825-1:2014

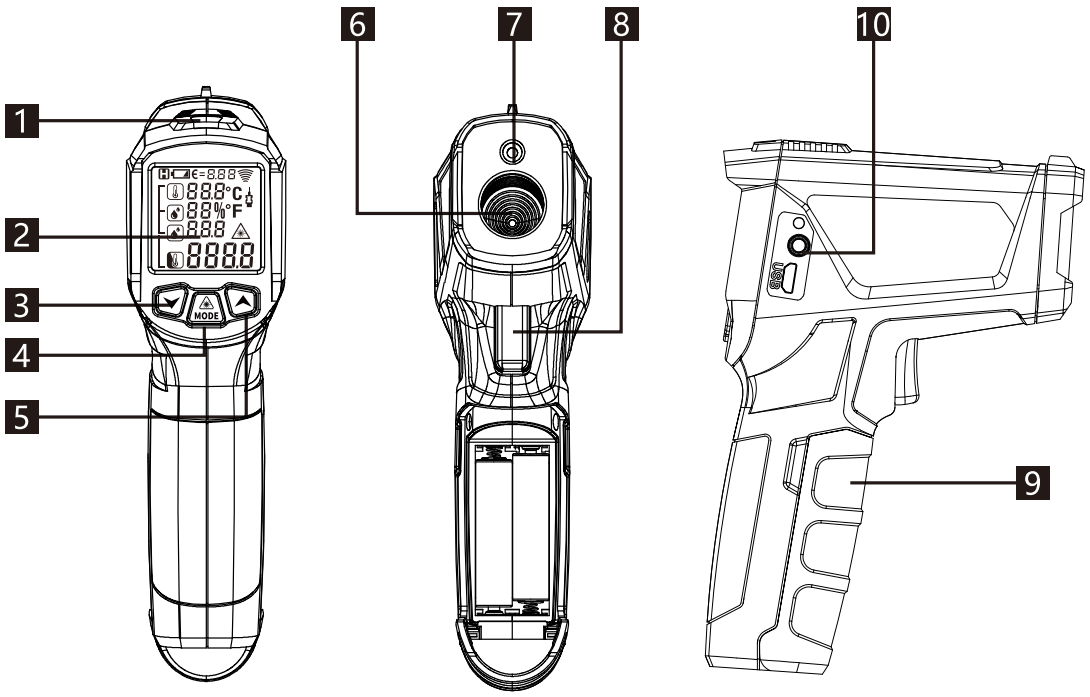
Warning! ⚠

Do not aim the laser at human eyes or reflective planes.

II.Cautions

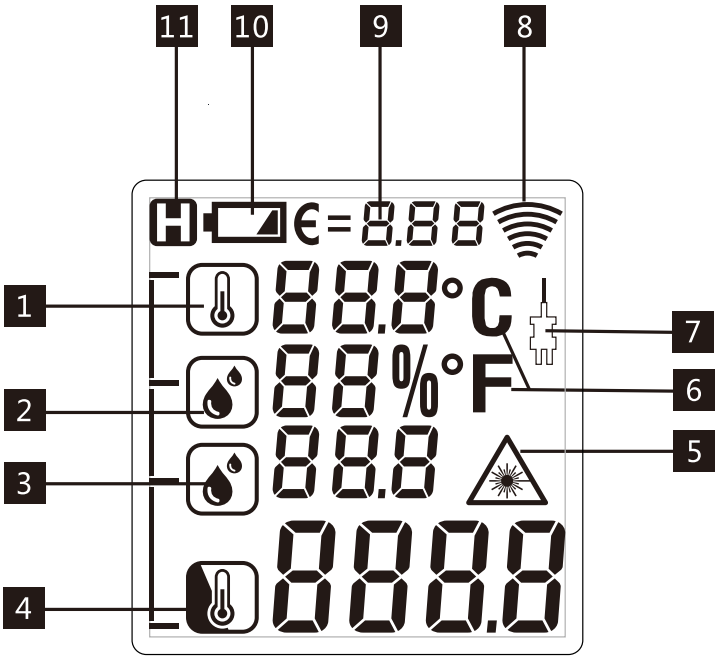
- When the temperature of the operating environment changes suddenly, the thermometer must be stabilized in the environment for 30 minutes until the temperature in and out of the thermometer is the same.
- Avoid electromagnetic fields caused by electric welding and induction heating as much as possible.
- Do not place the thermometer near or on high-temperature objects.
- Keep the thermometer clean and prevent dust from entering the lens.

III. Appearance Description



1. Alarm indicating light
2. LCD screen
3. Down key ▼
4. Mode key/Laser control key
5. Up key▲
6. Infrared sensor sensing area
7. Laser indicating light
8. Trigger key
9. Battery cover
10. K-type thermocouple socket

IV. Description of LCD Screen

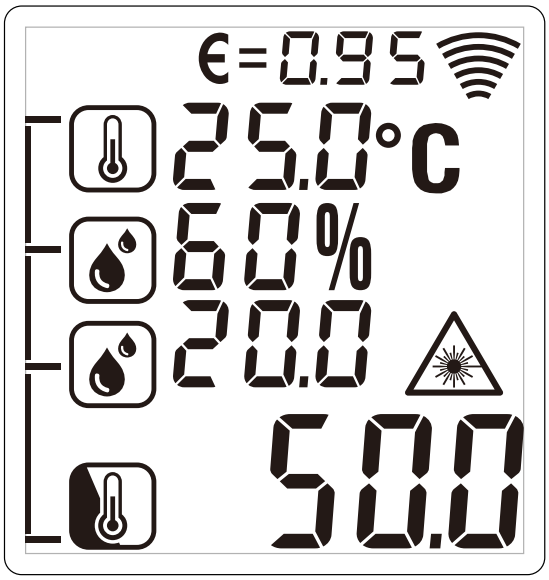


1: Environmental temperature
2. Environmental humidity
3: Dew temperature
4. Surface temperature
5: Laser on indication
6: Degree-day
7: K-type thermocouple
8: Measurement Instructions
9: Radiance
10: Battery undervoltage alarm
11: Data Retention

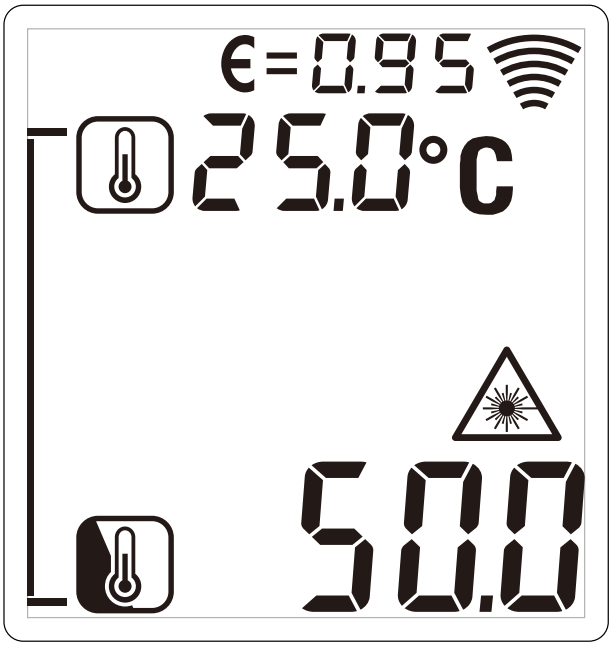
V. Measurement methods

1. Mildew alarm mode:

Press the trigger key,the screen displays the current environment temperature, humidity, dew and surface measurement temperature.The meter judges whether the measured object mildews or not according to the surface temperature of the measured object and the dew temperature of the current environment.When the measured object does not mildew, the green light of the thermometer is on;when the measured object has mildewed, the red ight is on;when the measured object has a tendency to mildew, the yellow light is on.

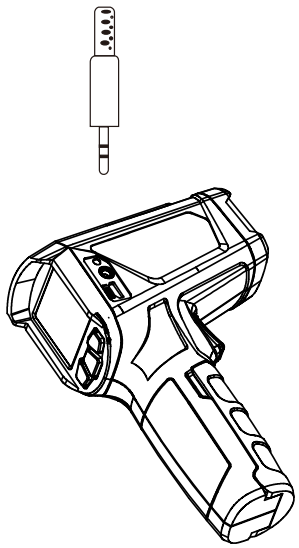


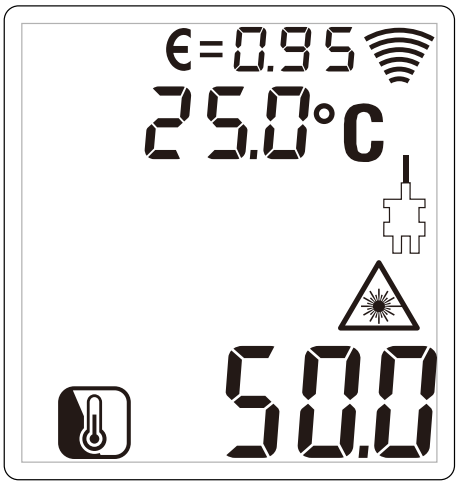
2. Temperature difference alarm mode
   Press the MODE key shortly to switch to the temperature difference alarm mode, and press the trigger key. The thermometer displays the current environment temperature and surface measurement temperature.The meter judges according to the temperature difference between the surface temperature of the measured object and the current environment temperature.When the temperature difference between the temperature of the object to be measured and the environment temperature is less than 5℃/41°F,the green light is on;when more than 5℃/41°F, red light is on;otherwise, yellow light is on.



3: Temperature Measurement of K- Type Thermocouple

Press the MODE key shortly to switch to the K-type thermocouple temperature measurement mode, and the symbol will be displayed.Insert the K-type thermocouple probe into the thermocouple socket of the thermometer, and press the trigger key. The thermometer displays both the K-type temperature and the surface temperature.





4. Set the the radiance

Press the MODE key shortly to switch to the state of setting the radiance.Then, the radiance indication area flashes. Press the ▲/▼ key to increase or decrease the radiation value, and press the ▲/▼ key for a long time to quickly increase or decrease the set value.

5: Set the degree-day (°C/°F)

Press the MODE key for 2 seconds to enter the unit setting state, press the MODE key to switch to setting the temperature measurement unit, the unit icon on the display screen flashes, and press the ▲/▼ key to change the icon unit.

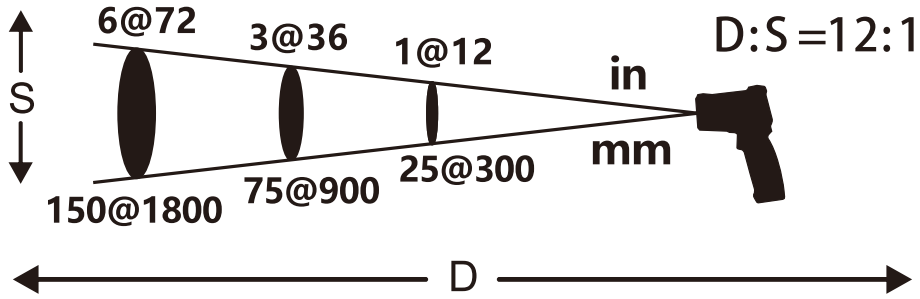
Press the MODE key shortly to switch the degree-day, the unit icon on the display screen flashes, and press the ▲/▼ key to change the temperature symbol unit.

6: Turn on and off the laser

Press MODE for 2 seconds to turn on or off the laser, and the meter displays the laser symbol 

VI. Target Distance Ratio (D:S)

The thermometer is 12 meters away from the target object. The diameter of the object is 1 meter. The larger the object, the farther the distance from the object surface.The smaller the object, the closer the distance.The distance from the object surface to the spot size of the measured target D:S is 12 :1, as shown in the following figure:



When the meter measures, the meter emits a 12-point indicating ring, and the temperature measured by the surface meter is the temperature inside the ring.

VII. Emissivity

Emissivity: The ability of an object to radiate infrared rays. The higher the radiance, the stronger the radiation capability of the object surface.The emissivity of most organic or metal oxide surfaces is between 0.85 and 0.98. The emissivity of this thermometer defaults to 0.95.During measurement, the radiance of the unit should be set to be consistent with that of the measured object.Please pay attention to the influence of emissivity on measurement results during measurement.

Please refer to the the following emissivity table

Table 2: Surface Emissivity

Measured surface		Radiance
Metallic aluminum	Oxidation	0.2~0.4
	A3003 alloy (oxidation)	0.3
	A3003 alloy (rough)	0.1~0.3
Brass	Polishing	0.3
	Oxidation	0.5
Copper	Oxidation	0.4~0.8
	Electrical terminal board	0.6
Hastelloy B		0.3~0.8
Ferronickel alloy	Oxidation	0.7~0.95
	Sand blasting	0.3~0.6

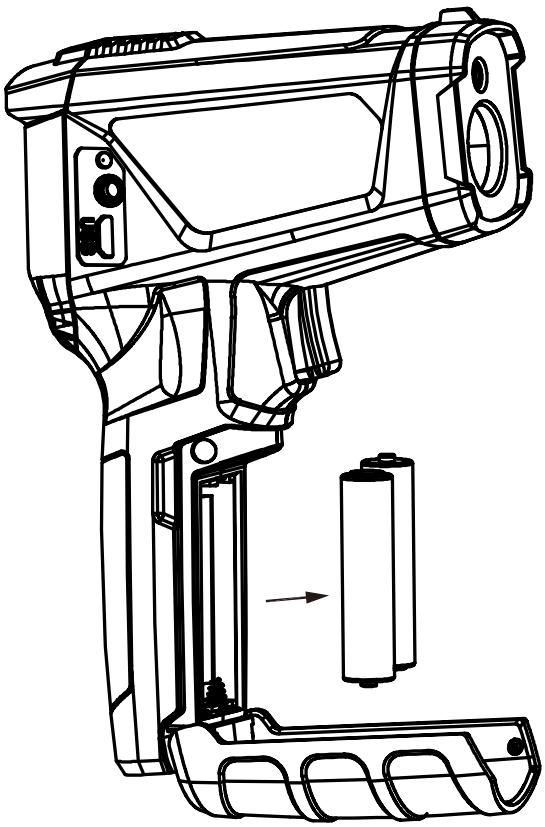
	Electropolishing	0.15
Iron	Oxidation	0.5~0.9
	Rust	0.5~0.7
Iron (Casting)	Oxidation	0.6~0.95
	Unoxidized	0.2
	Casting	0.2~0.3
Iron (Forging)	Passivation	0.9
Lead	Rough	0.4
	Oxidation	0.2~0.6
Molybdenum oxidation		0.2~0.6
Molybdenum oxidation		0.2~0.5
Platinum black		0.9
Steel	Cold rolling	0.7~0.9
	Burnish steel plate	0.4~0.6
	Polish steel plate	0.1
Zinc	Oxidation	0.1
Asbestos		0.95

Asphalt	0.95
Basalt	0.7
Carbon (not oxidized)	0.8~0.9
Graphite	0.7~0.8
Silicon carbide	0.9
Ceramics	0.95
Clay	0.95
Concrete	0.95
Cloth	0.95
Glass pane	0.85
Gravel	0.95
Gypsum	0.8~0.95
Ice	0.98
Limestone	0.98
Paper	0.95
Plastic	0.95
Soil	0.9~0.98

Water	0.93
Wood	0.9~0.95

VIII. Battery Replacement

When the battery power is insufficient, the battery icon lights up, and the battery must be replaced.Open the battery cover by hand and replace it with a new 1.5Vx2AAA battery.See thefollowing figure:



IX. Technical indicators

LCD display	Color LCD display
D:S	12： 1
Radiance	0.10~1.00
Response spectrum	8~14um
Laser	<1mW /620-690nm class II
Reaction time	<0.5S
Automatic shutdown	About 25 seconds
Usage temperature	0~40 degrees
Storage temperature	-10℃~60℃
Power supply	2x1.5V AAA Battery
Measuring range	-50 °C~800 °C（-58°F~1472°F）
Enviromental humidity	±1.0°C/2°F（0~45°C/32~113°F）
Enviromental humidity	±4.0% RH（20%~80%）
K-type temperature measurement	-10 °C~500 °C(14°F~932°F) ±(1.5%+2°C/4°F)