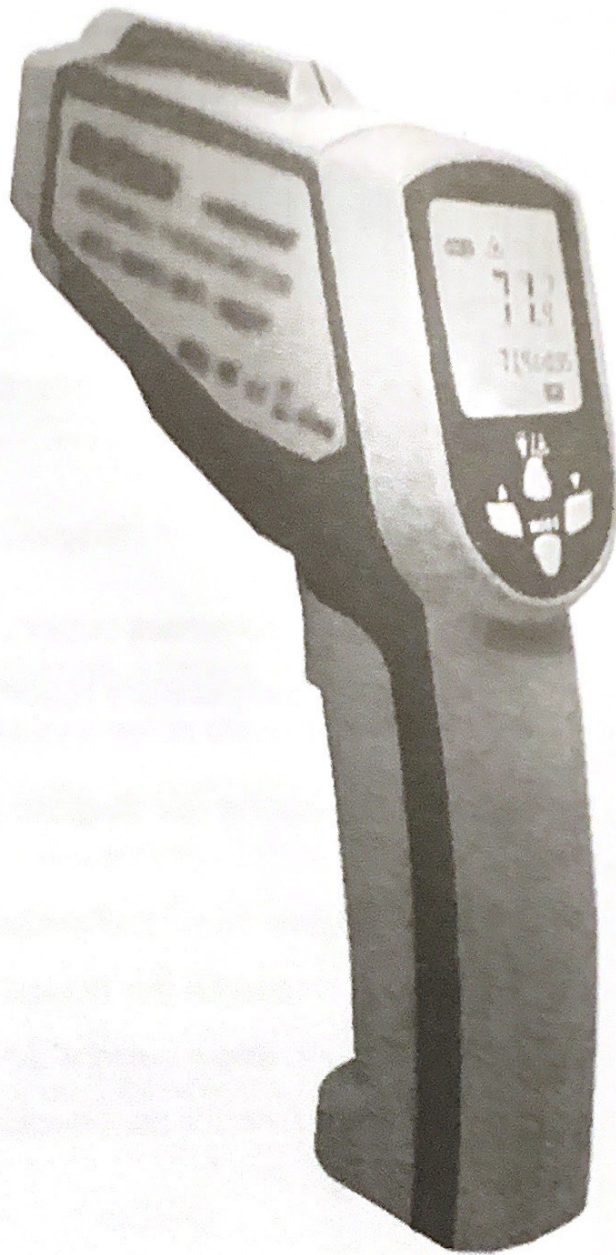


INFRARED THERMOMETER INSTRUCTION MANUAL



Temperature	Infrared Thermometer
Accuracy Resolution	$\geq 100^{\circ}\text{C} \pm 2\%$ / $\leq 100^{\circ}\text{C} \pm 2^{\circ}\text{C}$
Response Time	$\leq 0.5\text{S}$
Emissivity	Adjustable (0.1 to 1.0)
Distance to Spot Ratio	12:1 16:1 50:1
Storage Temperature	-20 to 50°C (-4 ~ 122°F)
Operating Temperature	0 to 50°C (32 ~ 122°F)
Power / Power Life	9V /about 12 hours

Warning

Do not point laser directly or indirectly (through reflective surfaces) at eye.

2. Operation

1), Turn on

Install the battery and press the measurement button, then the thermometer turn on and show the temperature reading automatically.

2), LCD display

The LCD display the signals of functions (as diagram 2 shows).

3), Measurement

Aim to target article with thermometer head and press the measurement button (trigger), and release the button (need to press the button for at least 0.5 second) to show current temperature reading, or press the button all the time for continuous testing with more temperature reading results.

4), Turn off

The thermometer will turn off automatically after 15 seconds without any operation.

3. Distance Spot Ratio

Farther the target, larger the test spot area, it means: As the distance from thermometer to the object increases, the spot size of measuring area becomes larger, (as Diagram 1) it is named as "D:S" (Distance Spot Ratio), for example, if 12:1, the efficient testing distance should be 12 times as the diameter of the target object. Make sure the target is larger than the spot size. The smaller the target, the closer measure distance needs. When accuracy is critical, make sure the target is at least twice as large as the spot size.

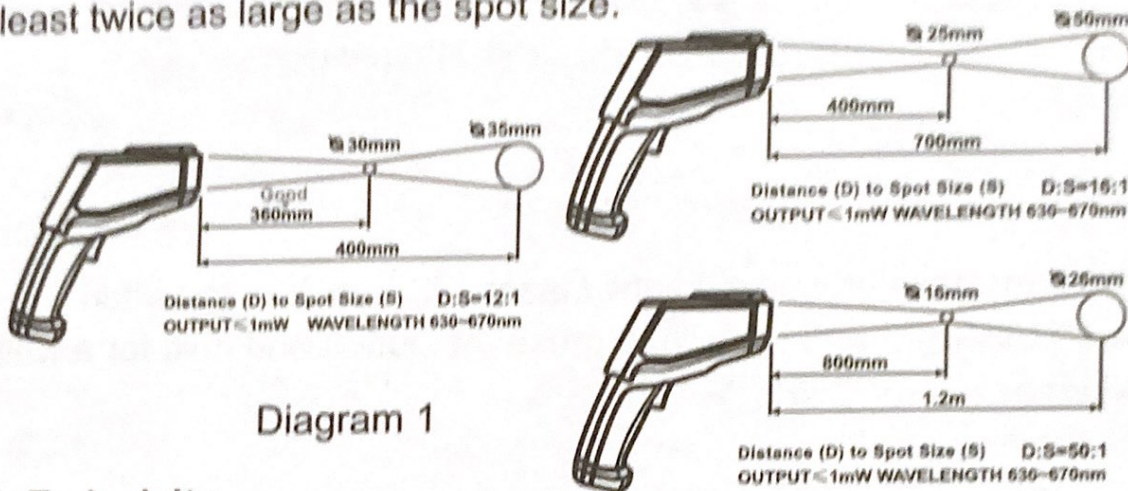


Diagram 1

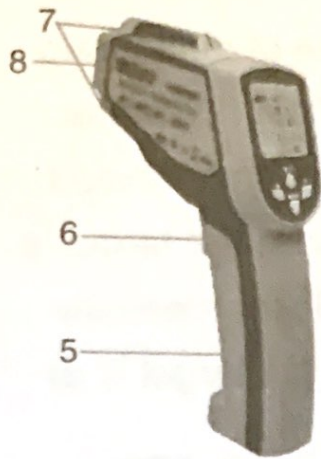
4. Emissivity

Most organic materials, painted or oxidized surfaces have an emissivity of 0.95 (pre-set in the unit). Inaccurate readings will result from measuring shiny or polished metal surfaces (for example, stainless steel or aluminium). To make better accuracy, cover the surface to be measured with masking tape or flat black paint.

Measure the tape or painted surface when the tape or painted reach the same temperature of the material underneath.

Please kindly note: thermometer can not test the temperature of target objects through across the glass. And steam, dust, smog will lower the accuracy of testing.

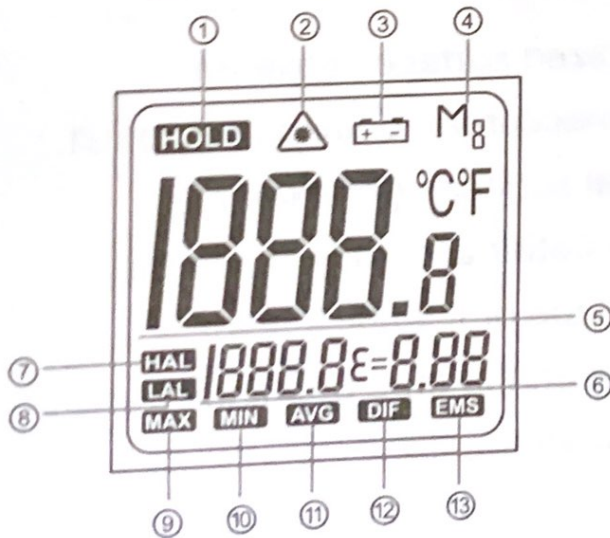
5. Detailed function



- 1: LCD
- 2: backlight / laser / °C °F button
- 3: function button
- 4: up/down button
- 5: battery cover
- 6: measure key
- 7: laser hole
- 8: infrared lens

Diagram 2

Button function: press backlight / laser / °C °F button to switch between backlight and laser, and press the button and hold for a while to switch between °C and °F.



- 1: **Data Hold:** to keep current reading
- 2: **Laser Sign:** test with laser
- 3: **Low Battery Indication:** to remind user to change battery
- 4: **Data recall:** press the function key to display the first record, then press the function key again for 0.5second to show the second record, and to show third record as above same way
- 5: current temperature reading
- 6: **Setting display:** to display the related info according to your setting

Diagram 3

- 7: **High temp alarm:** alarm buzz on when the temperature reading is higher than setting temperature
- 8: **Low temp alarm:** the alarm buzz on when the temperature reading is lower than setting temperature
- 9: **Max measure:** it shows maximum temperature reading after pressing the measure button and hold for a while
- 10: **Min measure:** it shows minimum temperature reading after pressing the measure button and hold for a while
- 11: **Average measure:** it shows average temperature reading after pressing the measure button and hold for a while
- 12: **Difference measure:** it shows the difference between maximum and minimum reading
- 13: **Emissivity:** adjustable from 0.1 to 1.0 to suitable for testing of different articles

6. Infrared thermometer should be protected in the following:

- EMF (electro-magnetic fields) from arc welders, induction heaters.
- Thermal shock (caused by large or abrupt ambient temperature changes, it allows 30 minutes for unit to stabilize before use).
- Do not leave the unit on or near objects of high temperature.

7. Maintenance

1. Lens cleaning: Use the clean compressed air to blow off loose particles, use the soft brush to remove the debris away, at last clean it with wet cotton cloth.
2. Case cleaning: Clean the case with a damp sponge/cloth and mild soap.

NOTE:

1. Do not use solvent to clean lens.
2. Do not submerge the unit in water.



Emissivity Of Articles

Material	Feature	Emissivity	Material	Feature	Emissivity
Aluminium	Oxidized	0.3	Human skin		0.98
	Polished	0.02-0.04	Graphite	Oxidized	0.20-0.60
Brass	Oxidized	0.5	Plastic	non-transparent	0.95
	Polished	0.02-0.05	Rubber		0.95
Gold		0.01-0.10	Plastic cement		0.85-0.95
Iron	Oxidized	0.7	Concrete		0.95
Steel	Oxidized	0.70-0.90	Cement		0.96
Asbestos		0.95	Soil		0.90-0.98
Plaster		0.80-0.90	Mortar		0.89-0.91
Asphalt		0.95	Brick		0.90-0.96
Rock		0.7	Marble		0.94
Wood		0.90-0.95	Textile		0.90
Charcoal	powdered	0.96	Paper		0.95
Carbon		0.85	Sand		0.90
Lacquerwork	lackluster	0.97	Clay		0.92-0.96
Carbon Cement		0.90	Sand		0.9
Soap Bubble		0.75-0.80	Glass		0.85-0.92
Water		0.93	Textile		0.95
Snow		0.83-0.90	Heated food		0.95
Ice		0.96-0.98	Plastic		0.95
Frozen Foods		0.95	Oil		0.94
Ceramics		0.95	Steel and iron		0.80
Limestone		0.98	Wool	Natural	0.94
Paint		0.93	Lead	Oxidized	0.5