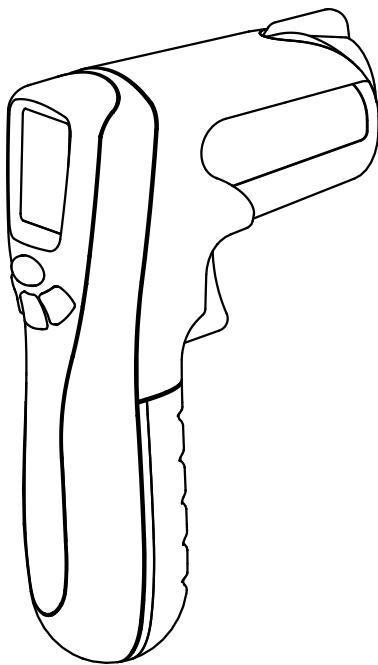


Infrared Thermometer

FAMCO User's Manual

هایپرمنت



Infrared Thermometer FAMCO



Description

Noncontact Thermometer detects the infrared ray that an object emits. The instrument focuses 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.

- Single-spot Laser Sighting
- Backlit Display
- Current Temperature Plus MIN, MAX, AVG Temperature Displays
- Preset Emissivity 0.95

Warning

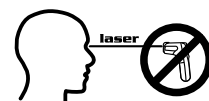
- Please read the following information carefully before using the meter. Protection is impaired if used in a manner not specified in this manual
- Do not clear the meter using solvents.
- Keep the instrument clean, and do not get dust into detecting hole.
- Do not point laser directly at eye or indirectly off reflective surfaces.
- Laser : class 2 <1mW/630-670nm
- Laser radiation is classified according to IEC 60825-1: 2014-05, Safety of laser products – Part 1: Equipment classification and requirements.

CAUTION

LASER RADIATION - DO NOT STARE INTO BEAM.
AVOID EXPOSURE - LASER RADIATION IS EMITTED FROM THIS APERTURE.
MAX OUTPUT <1mW, WAVELENGTH 630-670nm, CLASS 2 LASER PRODUCT

WARNING

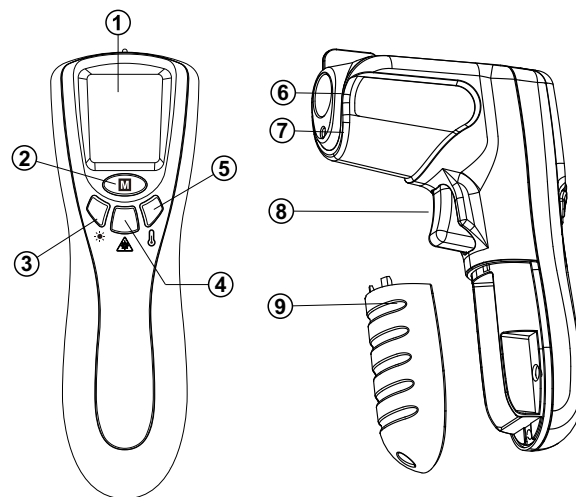
Laser radiation - when open do not stare into beam.



Infrared Thermometer FAMCO



Panel

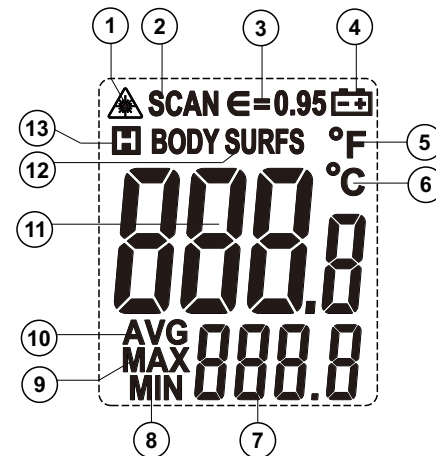


- | | |
|-----------------|-----------------|
| ① Screen | ⑥ Sensor |
| ② Mode key | ⑦ Laser |
| ③ Backlight key | ⑧ Trigger |
| ④ Laser key | ⑨ Battery cover |
| ⑤ °C/°F key | |

Infrared Thermometer FAMCO



Display



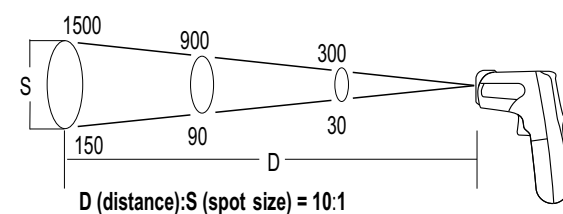
- | | |
|---------------------|-------------------|
| ① Laser indicator | ⑧ Min value |
| ② Scan status | ⑨ Max value |
| ③ Emissivity | ⑩ Average value |
| ④ Low battery | ⑪ Primary display |
| ⑤ °F unit | ⑫ Surface scan |
| ⑥ °C unit | ⑬ Hold status |
| ⑦ Secondary display | |

Infrared Thermometer FAMCO



D:S ratio

Unit: mm

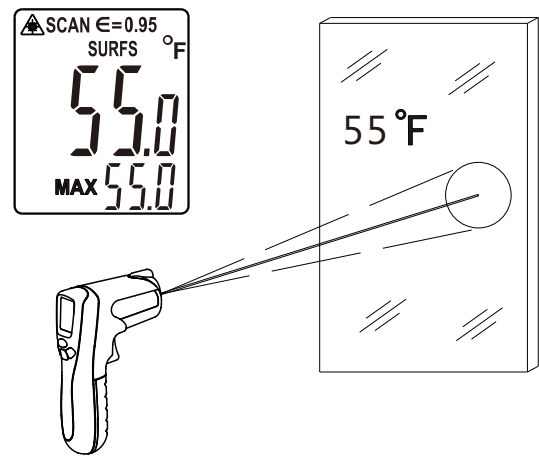


D (distance):S (spot size) = 10:1

Make sure that the target is larger than the meter's visual spot size. The smaller the target, the closer you should be to it. The relationship between distance and spot size is 10:1

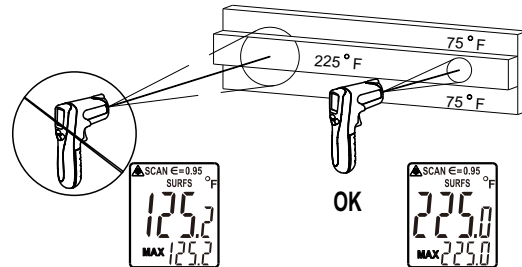
Operating Thermometer

- To measure temperature, pull and hold trigger. Release the trigger to hold a temperature reading. The meter turns off when no activity is detected for ten seconds.
- Press **M** key to toggle between the MAX, MIN, AVG value.
- Press **L** key to Active the laser.
- Press **☀** key to light on or off the backlight.
- Press **°C/°F** key to switch between °C or °F.



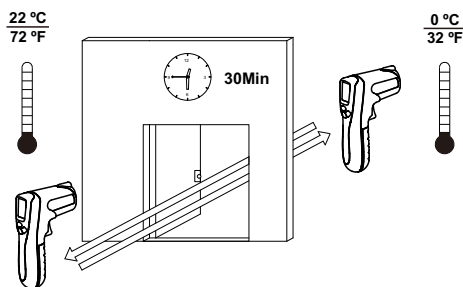
Note1

Make sure that the target is larger than the meter's visual spot size



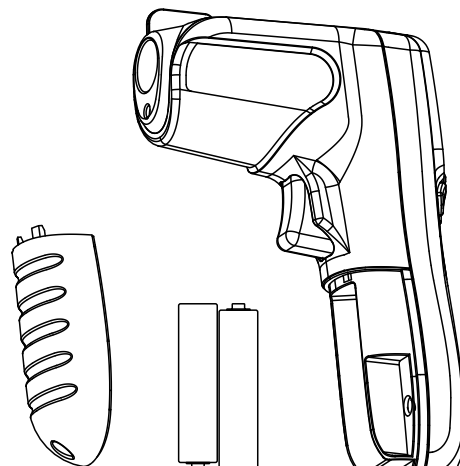
Note2

When ambient temperature changes quickly, must wait 30 minutes to balance the temperature of the instrument before use.



Note3

When the battery voltage is lower, the battery symbol appears, it indicates that we must change the battery.



WARNING

Do not mix old and new batteries. Do not mix alkaline, standard (carbon-zinc), or rechargeable (ni-cad, ni-mh, etc) batteries.

Specifications

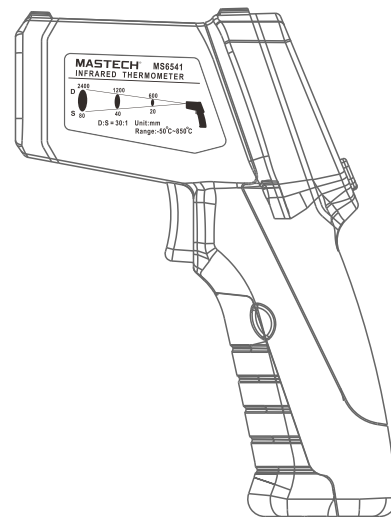
| | | | |
|---|---|-------------------|-----------------------------|
| Temperature range | -20°C~-500°C(-4°F~932°F) | | |
| Accuracy: Assumes ambient Operating temperature (23°C ± 2°C or 73°F±3°F) | -20°C~0°C(±3°C) -4°F~32°F(±5°F) 0°C~500°C ±(2.0%rdg+2°C) 32°F~932°F(2.0%rdg+3°F) | | |
| Optical resolution | 10:1 | Spectral response | 8-14 um |
| Repeatability | 1°C | Response time | Approx.1s |
| Resolution | 0.1°C/0.1°F | Emissivity | 0.95 |
| Ambient Operating Range | 0~40°C | Relative humidity | 10%~90% |
| CE | Conforms to: EN61326 EN61010-1 EN60825-1 | Laser | <1mW 630-670nm class2 |
| ETL Intertek | CONFORMS TO UL STD 61010-1, CERTIFIED TO CSA STD C22.2 No.61010-1 | Dimensions | 143x99x47mm |
| Power | 2x1.5V AAA | Weight | Approx.160g |

Warranty

This product will be free from defects in material and workmanship for eighteen months from the date of purchase. This warranty does not cover disposable batteries or damage for accident, neglect, misuse, alteration, contamination, or abnormal conditions of operation or handling.



Instruction Manual MS6541 (IRT730K)



1. Product Overview

Thank you for purchasing our infrared thermometer. This product is a professional, hand-held meter for non-contact infrared and K-type thermocouple temperature measurements that is simple to use, highly accurate, and with a wide temperature range.

2. Features

- Fast measurement
- Non-contact infrared and precision k-type temp measurement
- Built-in dual laser sight for faster and more accurate targeting
- Adjustable Emissivity: 0.1 to 1.0 range for multiple surface types
- Temp. unit conversion, maximum, minimum, average, difference displays
- Record up to 99 readings
- Resolution: 0.1°C (0.1°F)
- High temperature alarm setting
- Automatic range, data hold, and auto power functions

3. Uses

This product is widely used in food services, security, fire prevention, chemical, storage, and transport industries

4. Safety Information

- When laser beam is active, use with caution
- DO NOT aim laser beam at a person's/animal's eyes
- DO NOT use the laser beam near explosive gas

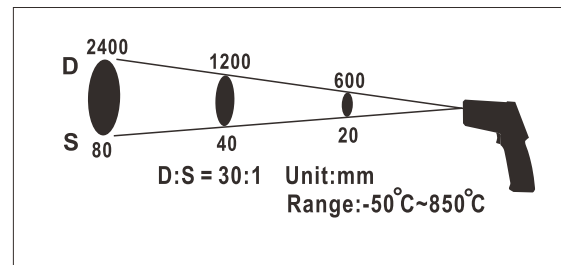
CAUTION
LASER RADIATION - DO NOT STARE INTO BEAM.
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MAX OUTPUT < 1mW, WAVELENGTH 630-670nm, CLASS 2 LASER PRODUCT

WARNING
Laser radiation - when open do not stare into beam.



5. Distance to Spot Ratio

The distance to spot ratio (D:S) for this meter is: 30:1. Example: Measurement from a distance of 300mm away will produce a measurement spot of approx. 10mm in diameter. Figure 1 shows a diagram of how distance to spot ratio works.



6. Technical Specifications

| | | |
|-------------------|---|-------------------|
| Model | IRT730 | |
| Range | IR: -50~760°C/-58~1400°F TK: -50~300°C/-58~572°F | |
| Accuracy | IR: -50~0°C/-58~32°F: | ±4°C/7.2°F |
| | IR: 0~400°C/32~752°F: | ±1.5%, ±2°C/3.6°F |
| | IR: 400~760°C/752~1400°F: | ±2%, ±2°C/3.6°F |
| | TK: -50~300°C/-58~572°F: | ±1.5%, ±3°C/5.4°F |
| D:S | 30:1 | |
| Emissivity | Adjustable: 0.10~1.0 | |
| Resolution | 0.1°C (0.1°F) < 1000, 1°C (1°F) > 1000 | |
| Response Time | < 500ms | |
| Spectral Response | 8~14µm | |
| Low/High Alarm | Low | High |
| Polarity Display | Automatic (no indication for positive) | |
| | “-“ indicates negative | |
| Auto Power Off | IRT will turn off after 30s of non-use | |

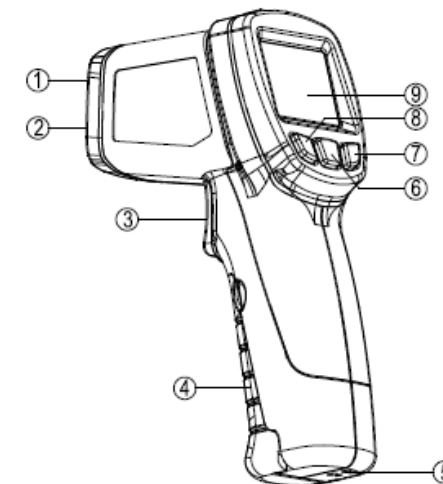
| | |
|-----------------------|--|
| Operating Temperature | 0°C~50°C/32°F~122°F |
| Storage Temperature | -20°C~60°C/-4°F~140°F |
| Relative Humidity | Operating: 10~90% RH, Storage: <80% RH |
| Battery | 9V battery |
| Weight | 252g |
| Dimensions | 176x125x49mm |
| Safety | Compliance with European CE safety standards |

Note:

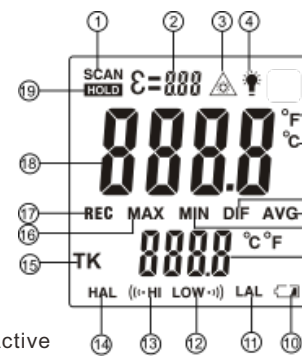
- Calibration is carried out at a temperature between 18° and 28° (64° to 82°) and relative humidity below 80%.
- Make sure that the target is larger than the meter's visual spot size. The smaller the target, the closer the meter should be.

7. Buttons and Components

- Laser Sight
- Infrared Sensor
- Measurement Trigger
- Battery Cover
- Type-K Thermocouple Jack
- Mode Button
- Laser/Backlight Button
- Temp. Unit Button
- LCD Display



8. Display Description



- Scan Active
- Emissivity Value
- Laser
- Backlight
- Temp. Units
- Difference
- Average Reading
- Minimum Reading
- Secondary Function Display
- Low Battery
- Low Alarm Setting
- Low Alarm Active
- High Alarm Active
- High Alarm Setting
- Type-K Temperature
- Maximum Reading
- Memory Storage
- Main Measurement Display
- Data Hold

9. Operating Instructions

9.1 Measurement

1. Point the meter at the object to be measured.
2. Hold down the trigger to begin measurement. The "SCAN" symbol flashes in the upper left corner of the display to indicate measurement taking place.
3. The main measurement display shows the current temperature reading of the measured surface.
4. Release the trigger and "HOLD" symbol will appear in the upper left corner and the display will hold the last reading.
5. The meter's auto off function will turn off the meter 35s after releasing the trigger.

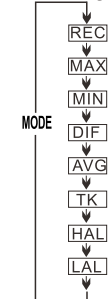
Note:

- Environmental temperature can affect the accuracy of the reading. It is recommended the meter be placed in the measurement environment for 30 min. prior to taking measurement.
- Laser can be turned off for measurements at close range to conserve battery power.

9.2 Function Buttons

9.2.1 Mode

9.2.1.1 While the thermometer is on, press to switch between functions according to the following graph:



Note: In "REC" mode, press or to cycle through all stored readings.

9.2.1.2 While the thermometer is on, hold and the "ε" symbol will flash, allowing for adjustment of the emissivity value. You can increase or decrease the value using the or buttons. Pressing the button once will let you adjust the high alarm setting and pressing it again will adjust the low alarm setting. Hold the button to return to normal mode.

9.2.2 Laser/Backlight During measurement, press to turn on/off the laser pointers. In "HOLD" mode, press the button to turn on/off the backlight.

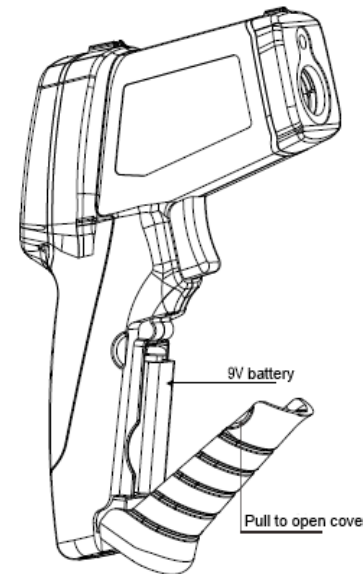
Note:

This function works in all modes except "REC" mode.

9.2.3 Temperature Units In any mode except "REC" press to switch between Celsius/Fahrenheit.

9.3 Battery Replacement

When the battery is running low, the symbol will appear indicating the battery needs to be replaced. Open the battery cove and replace the old battery with a new 9V battery.



10. Additional Notes

10.1 Thermometer

- Infrared thermometers are used to measure surface temperature.
- The sensor collects infrared energy and is gathered in the detector circuit and converted into a temperature reading for display.
- The laser pointers are only used for aiming purposes

10.2 Surfaces

- Make sure the object to be measured is larger than the diameter of the thermometer's spot field.
- The smaller the target, the closer the meter should be.

10.3 Distance to Spot Size

- As the distance between the surface to be measured and the meter increases, the spot increases according to the ratio 30:1.

10.4 Hotspot positioning

- To find a hotspot, aim the thermometer outside the area to be measured and then move it around within the correct area to find the hotspots.

10.5 Tips

- Not recommended for measuring on light metal or smooth metal surfaces such as stainless steel, aluminum, etc.
- Sensor cannot penetrate through transparent surfaces such as glass.
- Steam, dust, smoke, etc. block the sensor from picking up infrared energy, thus decreasing its accuracy.

10.6 Warranty

- Clean the meter regularly with a dry cotton cloth. DO NOT use any type of chemicals or detergents.
- Maintenance and repairs should only be done by qualified personnel.
- DO NOT immerse the thermometer in water.
- DO NOT store the thermometer in an area with high temperature or high humidity.

10.7 Emissivity

- Emissivity characterizes the type material and the amount of radiant energy given off by the material. Most organic materials and painted/oxidized surfaces have an emissivity of 0.95.

11. Accessories and Table of Emissivity

11.1 Accessories

- Instruction Manual
- Warranty Card
- 9V Battery
- Type-K Thermocouple
- Hook

11.2 Table of Emissivity

| Material | Emissivity | Material | Emissivity |
|-------------|------------|---------------|--------------|
| Aluminum | 0.30 | Glass | 0.90 to 0.95 |
| Asphalt | 0.95 | Iron Oxides | 0.78 to 0.82 |
| Concrete | 0.95 | Paint | 0.80 to 0.95 |
| Asbestos | 0.95 | Plastic | 0.85 to 0.95 |
| Ceramics | 0.95 | Paper | 0.70 to 0.94 |
| Brass | 0.50 | Plaster | 0.80 to 0.90 |
| Brick | 0.90 | Rubber | 0.95 |
| Carbon | 0.85 | Wood | 0.90 |
| Sludge | 0.94 | Textile | 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 | Sand | 0.90 |
| Human Skin | 0.98 | Water | 0.93 |

