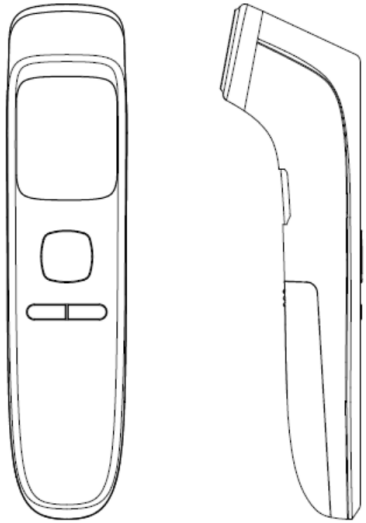
Non-contact Forehead Infrared Thermometer User Manual



Manual Ver.: V1.1
Issuing Date: 12/06/2018

Introduction

Thank you for purchasing this Non-contact forehead Infrared Thermometer. It has been carefully developed for accurate, safe and fast temperature measurements in the forehead.

Please read these instructions carefully before using this product and keep the instructions and the thermometer in a safe place.

Package Contents

No.	Name	Quantity
1	Infrared Thermometer	1
2	Pouch	1
3	Battery (AAA, optional)	2
4	User Manual	1

Note to model

Model	Extended Function
FC-IR200	With distance-to-spot sensor
FC-IR201	With light spot projection to forehead Without distance-to-spot sensor

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1. WARNINGS AND PRECAUTIONS

1) Keep out of reach of children under 12 years.

2) Never immerse the thermometer into water or other liquids (not waterproof). For cleaning and disinfecting please follow the instructions in the “Care and cleaning” section.

3) Never use the thermometer for purposes other than those it has been intended for. Please follow the general safety precautions when using on children.

4) Keep the thermometer away from direct exposure to the sun and keep it in a dust- free, dry area, well-ventilated place at a temperature between 10°C (50°F)-40°C (104°F). Do not use the thermometer in high humidity environments. (＞95% RH)

5) Do not use the thermometer if there are signs of damage on the measuring sensor or on the instrument itself. If damaged, do not attempt to repair the instrument! Please contact dealer.

6) This thermometer consists of high-quality precision parts. Do not drop the instrument. Protect it from severe impact and shock. Do not twist the instrument or the measuring sensor.

7) Please consult your doctor if you see symptoms such as unexplained irritability, vomiting, diarrhea, dehydration, changes in appetite or activity, seizure, muscle pain, shivering, stiff neck, pain when urinating, etc., even in the absence of fever.

8) Even in the absence of fever, those who exhibit a normal temperature may still need to receive medical attention. People who are on antibiotics, analgesics, or antipyretics should not be assessed solely on temperature readings to determine the severity of their illness.

9) Temperature elevation may signal a serious illness, especially in adults who are old, frail, have a weakened immune system, or neonates and infants. Please seek professional advice immediately when there is a temperature elevation and if you are taking temperature for whom are:

- Over 60 years of age (Fever may be blunted or even absent in elderly patients)
- Having diabetes mellitus or a weakened immune system (e.g., HIV positive, cancer, chemotherapy, chronic steroid treatment, splenectomy)
- Bedridden (e.g., nursing home patient, stroke, chronic illness)
- A transplant patient (e.g., liver, heart, lung, kidney)

10) This thermometer is not intended for pre-term babies or small-for-gestational age babies. This thermometer is not intended to interpret hypothermic temperatures. Do not allow children to take their temperatures unattended.

11) Use of this thermometer is not intended as a substitute for consultation with your physician or pediatrician. It is for household use only.

12) **Clean the thermometer probe after each use.**

13) Do not use the thermometer on newborns or for continuous temperature monitoring purposes.

14) Do not take a measurement while or immediately after nursing a baby.

15) Patients should not drink, eat, or be physically active before/while taking the measurement.

2. Product Description

1) Overview

Infrared Thermometer measures the body temperature based on the infrared energy emitted from the forehead. Users can quickly get measurement results after properly scanning the forehead.
Normal body temperature is a range. The following tables show that this normal range also varies by site. Therefore, readings from different site should not be directly compared. Tell your doctor what type of thermometer you used to take your temperature and on what part of the body. Also bear this in mind if you are diagnosing yourself.

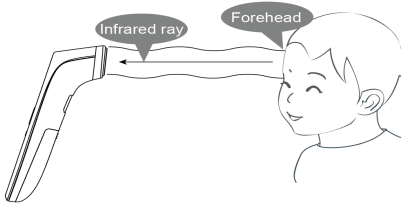
	Measurements
Forehead temperature	36.1°C to 37.5°C (97°F to 99.5°F)
Ear temperature	35.8°C to 38°C (96.4°F to 100.4°F)
Oral temperature	35.5°C to 37.5°C (95.9°F to 99.5°F)
Rectal temperature	36.6°C to 38°C (97.9°F to 100.4°F)
Axillary temperature	34.7°C–37.3°C (94.5°F–99.1°F)

2) Structure

The thermometer consists of a shell, an LCD, a measure button, a beeper, an infrared temperature sensor, and a Microprocessor.

3) Operating principle

The infrared temperature sensor collects infrared energy emitted by the skin surface. After being focused by a lens, the energy is converted into a temperature reading by the thermopiles and measurement circuits.



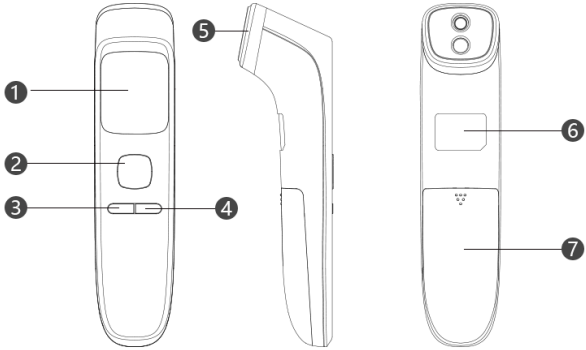
4) Indications for use

The Non-contact Infrared Thermometer is intended for the measurement of human body temperatures. The forehead mode is indicated for people of all ages.

3. Features

- Non-Contact Design, Safe and more hygienic to use.
- Quick measurement, less than 1 second
- Accurate and reliable
- Easy operation, one button design
- Multi-functional, can measure forehead, room, milk, water and object temperature.
- 35 sets of memories, easy to recall
- Switching between mute and un-mute mode
- Fever alarm function, displayed in orange and red light.
- Switching between ºC and ºF
- Auto shut-down and power-saving

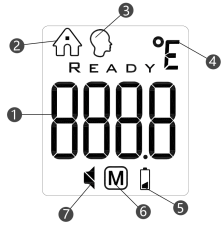
4. Product Structure



① LCD display screen
② Measure button
③ Mem (Memory Recall)
④ Mute-unmute button (or ºC/ºF conversion)
⑤ Sensor
⑥ Rating label
⑦ Battery cover

5. Display description

1. Temperature value
2. Object temperature mode
3. Forehead temperature mode
4. Fahrenheit / Celsius degrees
5. Battery level
6. Memory recall
7. Mute /Un-mute

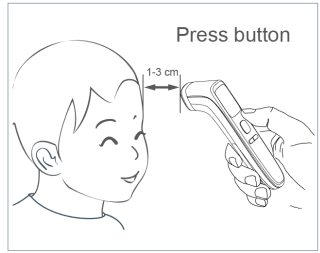


6. How to use your thermometer

When using the thermometer for the first time, please load the batteries.

1) Take your forehead temperature

Press the **Measure button** to power on. Only aimed at forehead in the distance of 1-3cm, no need of contacting skin, pressed to measure body temperature, the beep is heard, you can now read the value.



NOTE: The forehead measurement is an indicative reading. The measured forehead temperature can fluctuate up to 1 ºF/0.5 ºC from your actual body temperature. Please be aware of the factors that influence the accuracy as described in the section "Temperature taking tips" and "WARNINGS AND PRECAUTIONS".

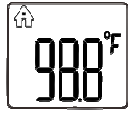
⚠ If the eyebrow area is covered with hair, sweat or dirt, please clean the area beforehand to improve the reading accuracy.

⚠ Always check if the lens is clean.

⚠ Always make sure the user and the thermometer will have been in the same room for at least 30 minutes prior to the measurement.

2) Take room/object temperature

When the thermometer is power off, press the **Mem button** for 3 seconds. Then press the **Measure button** to measure room/object. Keep the thermometer about 1-3cm away from the object. Press and release the **Measure button** in 1 second, the beep is heard, you can now read the value.



3) After a measurement

Once the reading has been completed, remove the thermometer away from the forehead and observe temperature.

After each measurement, you can enter the recall mode and query earlier temperature readings.

⚠ Do not hold the thermometer for a long time, because it is sensitive to the ambient temperature.

⚠ After each measurement, clean the temperature probe with a soft cloth, and put the thermometer in a dry and well-ventilated place.

⚠ You should wait at least 10 seconds between each measurement.

⚠ It is dangerous to make a self-diagnosis or self-treatment based on the obtained measurement results. For such purposes, please consult a doctor.

4) Read your temperature

T indicates a temperature reading. In forehead mode.
1. If 32°C≦T≦37.3°C(89.6°F≦T≦99.2°F), the green light will last for 3 seconds, with one long beep.
2. If 37.4°C≦T≦37.9°C(99.3°F≦T≦100.3°F), the orange light will last for 3 seconds, with 3 short beeps, and the value in LCD flickers, which is a warning that you may have a light fever.
3. If 38°C≦T≦42.9°C(100.4°F≦T≦109.2°F), the red light will last for 3 seconds, with 5 short beeps, and the value in LCD flickers, which is a warning that you may have a high fever.

5) Switching between mute and un-mute

When the thermometer is turned on, keep short pressing the **Mute-unmute button** for less than 1 second, to switch from un-mute to mute.

6) Checking 35 sets of memory data

When the thermometer is turned on, by short pressing the **Mem** to go to the memory mode, press this button again to check the 35 sets of memories one by one. If no value, it will display "---M".

7) ºC/ºF conversion

When the thermometer is turned on, keep long pressing the **Mute-unmute button** for 5 seconds, to change the ºC/ºF.

8) Temperature compensation adjustment

When the thermometer is turn on, press both the **Mute-unmute button and Mem button** for 2-3 seconds to go to the temperature compensation mode. By pressing the **Mem** to adjust the temperature from ±0.0 to ±2.0.

Note: All the future temperature you are taking will be automatically added the value you are adjusted.

9) To turn off

The unit will shut down automatically after 15 seconds of no use. Or you can keep pressing the **Measure button** for 6 seconds.

⚠ **Caution**

1. All memory records will loss when uninstall or reinstall the battery.

2. All settings will come to default when uninstall the battery. If need adjust the settings, please power on and make the new settings.

10) Replace the battery.

Slide the battery cover off along the marked direction. Put two AAA batteries correctly into the compartment.

⚠ Remove the batteries if the thermometer will not be used for more than two months.

7. Temperature taking tips

1) It is important to know each individual's normal temperature when they are well. This is the only way to accurately diagnose a fever. Record readings twice a day (early morning and late afternoon). Take the average of the two temperatures to calculate normal oral equivalent temperature. Always take the temperature in the same location, since the temperature readings may vary from different locations on the forehead.

2) A child's normal temperature can be as high as 99.9°F (37.7) or as low as 97.0°F (36.11). Please note that this unit reads 0.5ºC (0.9°F) lower than a rectal digital thermometer.

3) Holding the thermometer for too long in the hand before taking a measurement can cause the device to warm up. This means the measurement could be incorrect.

4) Patients and the thermometer should stay in steady-state room condition for at least 30 minutes.

5) Before placing the thermometer sensor onto the forehead, remove dirt, hair, or sweat from the forehead area. Wait 10 minutes after cleaning before taking measurement.

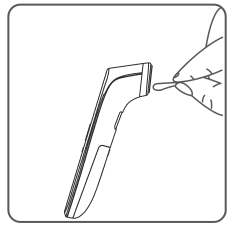
6) Use an alcohol swab to carefully clean the sensor and wait for 5 minutes before taking a measurement on another patient. Wiping the forehead with a warm or cool cloth may impact your reading. It is advised to wait 10 minutes before taking a reading.

7) In the following situations it is recommended that 3-5 temperatures in the same location be taken and the highest one taken as the reading:

- Newborn infants in the first 100 days.
- Children under three years of age with a compromised immune system and for whom the presence or absence of fever is critical.
- When the user is learning how to use the thermometer for the first time until he/she has familiarized himself/herself with the instrument and obtains consistent readings.

8. Care and cleaning

Use an alcohol swab or cotton swab moistened with 70% alcohol to clean the thermometer casing and the measuring probe. After the alcohol has completely dried out, you can take a new measurement.



Ensure that no liquid enters the interior of the thermometer. Never use abrasive cleaning agents, thinners or benzene for cleaning and never immerse the instrument in water or other cleaning liquids. Take care not to scratch the surface of the LCD screen.

9. Error and Troubleshooting

Symptom	Possible Cause	Description & Solution

Symptom	Possible Cause	Description & Solution
Failed to power on.	The battery level is too low.	Replace with a new battery
	Polarities of the batteries are reversed.	Ensure the batteries are in the right position
	The thermometer is damaged	Contact dealer
The reading is too low	The lens of the probe is dirty.	Clean the lens with a cotton swab.
	The distance of the item and target is too far	Keep the thermometer in contact with forehead, or put the probe into the Ear Canal.
	You have just come from a cold environment	Stay in a warmer room for at least 30 minutes before taking a reading
The reading is too high	You have just come from a hot environment.	Stay in an adequately cool room for at least 30 minutes before taking a reading
	The ambient temperature is not in range.	3 short beeps and red backlit for 3 seconds. Take a measurement under an ambient temperature between 10°C (50.0°F) and 40°C (104°F).
	Memory Error	3 short beeps and red backlit for 3 seconds. Contact dealer.
	In forehead mode, T > 42.9°C (109.2°F)	3 short beeps and red backlit for 3 seconds.

Symptom	Possible Cause	Description & Solution
	In forehead mode, T < 32ºC (89.6ºF)	3 short beeps and red backlit for 3 seconds.
	2.5V±3%≦power voltage ≦2.6V±3%	The battery level is low, it suggests you to replace the battery, but you can continue to use it.
	The power voltage is lower than 2.5V± 3%.	It will turn off automatically after 30 seconds. Please replace with a new battery

10. Specifications：

Product name	Infrared thermometer	
Power supply	DC1.5V×2	
Measurement range	Forehead**:** 32.0°C–42.9°C (89.6°F–109.2°F)	
	Object: 0°C–100°C (32°F–212°F)	
Accuracy (Laboratory)	Forehead mode	±0.2℃ /±0.4°F
	Object mode	±1.0°C/1.8°F
Display resolution	0.1℃/°F	
Measuring distance	1-3cm	
Automatic shutdown	10s±1s	
Memory	35 groups of measured temperature.	
Operational conditions	Temperature: 10℃-40℃ (50°F-104°F) / Humidity: 15-95%RH, non-condensing Atmospheric pressure: 86-106 kPa	
Battery	2*AAA, can be used for more than 3000 times	
Weight & Dimension	88.2g (without battery),161×43×68mm	

11. Symbols:

Symbol	Description
	Type BF applied part.
	Information about a manufacturer
	Please read the instructions carefully.
	Waste electrical materials should be sent to a dedicated collection point for recycling.
SN	Serial number
LOT	Batch number
	**IMPORTANT** Inaccurate reading or thermometer damage may occur if the thermometer is not correctly used.
IP22	2 Protected against solid foreign objects of 12,5 mm Ø and greater; 2 If keep the thermometer in 15 degree angle, it still can prevent the water drop.

12. EMC information

Guidance and manufacturer 's declaration-electromagnetic emissions		
The infrared thermometer is intended for using in the electromagnetic environment specified below. The customer or the user of the infrared thermometer should assure that it is used in such an environment.		
Emissions test	**Compliance**	**Electromagnetic environment-guidance**
RF emissions CISPR 11	Group 1	The infrared thermometer uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause and interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The infrared thermometer is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply
Harmonic emissions IEC 61000-3-2	N/A	

Voltage fluctuations /flicker emissions IEC	N/A	network that supplies buildings used for domestic purposes.

Guidance and manufacturer 's declaration-electromagnetic immunity			
The infrared thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the infrared thermometer should assure that it is used in such an environment.			
Immunity test	**IEC60601 test level**	**Compliance level**	**Electromagnetic environment -guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±2, ±4, ±6, ±8kV for Contact discharge ±2,±4, ±8,±15kV air discharge	±2, ±4, ±6, ±8kV for Contact discharge ±2,±4,±8kV, ±15kV air discharge	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%
Electrical fast transient/burst IEC 61000-4-4	±2 kV for a.c. power lines ±1 kV for d.c. power lines	N/A	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV line(s) to line(s) ±2 kV line(s) to earth	N/A	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations in power supply input lines IEC 61000-4-11	<5%***UT*** (>95 dip in***UT***) for 0.5 cycle 40%***UT*** (60% dip in***UT***) for 5 cycles 70% ***UT*** (30% dip in ***UT***) for 25 cycles <5%***UT*** (>95% dip in***UT*** for 5 s	N/A	Mains power quality should be that of a typical commercial or hospital environment. If the user of the infrared thermometer requires continued operation during power mains interruptions, it is recommended that the infrared thermometer be powered from an uninterrupted power supply or a battery

Power frequency (50/60Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment
NOTE*UT* is the a.c. mains voltage prior to application of the test level.			

Guidance and manufacturer 's declaration-electromagnetic immunity			
The infrared thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the infrared thermometer should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment-guidance**
Conducted RF IEC 61000-4-6	3Vrms 150kHz to 80MHz	N/A	Portable and mobile RF communications equipment should be used no closer to any part of the infrared thermometer including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance** $d=1.2\ P$

Radiated RF IEC 61000-4-3	3V/m 80kHz to 2.5GHz	3V/m	*d*=1.2 *P* 80MHz to 800MHz *d*=2.3 *P* 800MHz to 2.5MHz Here *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and *d* is the recommended separation distance in meters (m). Field strengths form fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance b level in each frequency range. Interference may occur in the vicinity of equipment marked with the following symbol: 

NOTE 1 At 90MHz and 800MHz, the higher frequency range applies.
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

a
Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the thermometer is used exceeds the applicable RF compliance level above, the thermometer should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the thermometer.
b
Over the frequency range 150kHz to 80MHz, field strengths should be less than 3V/m.

Recommended separation distances between portable and mobile RF communications equipment and the infrared thermometer

The infrared thermometer is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled.
The customer or the user of the infrared thermometer can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the infrared thermometer as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	**Separation distance according to frequency of transmitter m**		
Rated maximum output power of transmitter W	150kHz to 80MHz $d = 1.2\ P$	80MHz to 800MHz $d = 1.2\ P$	800MHz to 2.5GHz $d = 2.3\ P$
0.01	0.01	0.12	0.23
0.1	0.1	0.38	0.73
1	1	1.2	2.3
10	10	3.8	7.3
100	100	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.
NOTE 1 At 80MHz and 800MHz, the separation distance for the higher frequency range applies.
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

13. Warranty and After-Sale Service

The device is under warranty for 12 months from the date of purchase.

The batteries, the packaging, and any damage caused by improper use are not covered by the warranty.

Excluding the following user-caused failures:

1. Failure resulting from unauthorized disassembly and modification.

2. Failure resulting from an unexpected dropping during application or transportation.

3. Failure resulting from not following the instructions in the operating manual.