



Model 15007

JXB-178 Non-Contact Forehead Infrared Thermometer



Please read this manual before operating unit.
Important safety information inside.

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THE MANUFACTURER RESERVES THE RIGHT TO ALTER THE SPECIFICATIONS OF THE PRODUCT WITHOUT PRIOR NOTIFICATION.

General Description

The Non-Contact Infrared Forehead Thermometer was developed using the latest infrared technology. It measures body temperature by scanning the forehead from a distance of 3cm to 5cm (1.2in to 2in). It is essential to use the Non-Contact Forehead Infrared Thermometer properly to obtain reliable and stable results. Ensure each user is properly trained in operating the device.

Intended Use

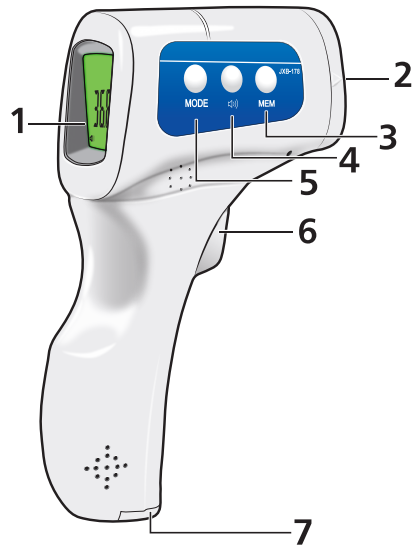
The Non-Contact Forehead Infrared Thermometer was designed to produce an instant forehead temperature reading, without making contact with the body.

Features

- Designed to take human body temperature at 3cm to 5cm (1.2in to 2in) from forehead
- High fever alarm
- Memory holds the last 32 temperature measurements
- Three color backlight LCD digital display
- Selectable °C/°F
- Automatic power-off (<30 secs) to conserve energy
- Guarantee of 100,000 readings

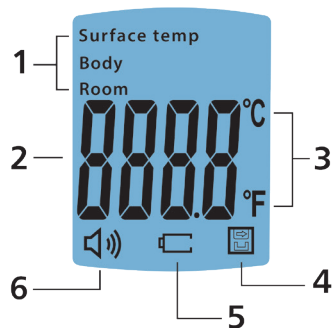
Configuration

1. LCD Display
2. IR Sensor
3. Memory Button
4. Alarm Button
5. Mode Button
6. Measurement Trigger
7. Battery Cover



LCD Screen Indicators

1. Temperature Scanning Mode
2. Temperature
3. Temperature Scale
4. Memory
5. Low Battery
6. Alarm Symbol



Explanation of Symbols

	The device is in accordance with Medical Device Directive 93/42/ EEC.
	The device is in accordance with CFR FCC Part 15 Subpart B (Class B) ANSI C63.4:2014 Interference-causing Equipment Standard - Digital Apparatus.
	3V DC power supply (2x 1.5v AA Batteries)
	EO: sales@eofirm.com www.eofirm.com 0755-84200058
	In order to protect the environment, please recycle the battery according to the local regulations.
	Attention! Consult accompanying documents.

Specifications

Display Resolution:	0.1°C (0.1°F)
Operating Temperature:	10°C to 40°C (50°F to 104°F)
Storage Temperature:	0°C to 50°C (32°F to 122°F)
Humidity Rate:	≤ 85%
Power:	DC 3V 2x 1.5v AA Batteries (not included)
Size:	155 mm L x 100 mm W x 40 mm H (6.1 in L x 3.93 in W x 1.57 in H)
Weight:	154gr/0.34lbs (with batteries) 105gr/0.23lbs (without batteries)

Measurement Range

Body Mode:	32°C to 43°C (89.6°F to 109.4°F)
Surface Mode:	0°C to 60°C (32°F to 140°F)
Room Mode:	0°C to 40°C (32°F to 104°F)
Accuracy:	± 0.3°C (0.54°F)
Measuring Distance:	3cm to 5cm (1.2in to 2in)
Response Time:	1 second

Body Mode Backlight

Green Backlight:	lower than 37.3°C (99.14°F), normal temperature
Orange Backlight:	37.4°C - 37.9°C (99.3°F - 100.2°F), low fever
Red Backlight:	higher than 38°C (100.4°F), high fever

Non-Contact Forehead IR Thermometer Accuracy

32°C to 34.9°C / 89.6°F to 94.8°F:	± 0.3°C/0.6°F
35°C to 42°C / 95°F to 107.6°F:	± 0.2°C/0.4°F
42.1°C to 43°C / 107.8°F to 109.4°F:	± 0.3°C/0.6°F

According to ASTM Standard E1965-1998 (2009)

Safety Information

- Follow the maintenance advice stipulated in this instruction manual.
- This device may be used for professional purposes or for personal home use.
- Use this device for the purposes described in this instruction manual only.
- Use this device in an ambient temperature range of 10°C to 40°C (50°F to 104°F).
- Keep device in a clean, dry area.
- Do not expose device to electric shock.
- Do not expose device to extreme temperatures (i.e. > 55°C or < -20°C) (>131°F or < -4°F).
- Do not use device in relative humidity higher than 85%.
- The protective glass covering the lens is very fragile. Handle with care.
- Do not touch the infrared lens glass with fingers.
- Do not expose device to sunlight or water.
- Never drop or strike the device.
- Should a problem occur with device, please contact retailer. Do not attempt to repair device.
- Do not throw unit in fire.

Advantages of Temporal Artery (ta) Temperature

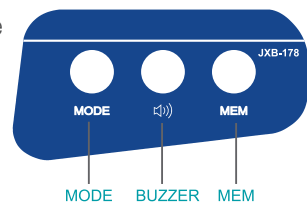
The temporal artery runs across the forehead, just below the skin. It is connected to the heart by the carotid artery, which is connected to the aorta. Given the location of this major artery, measuring temperature at the forehead renders a reliable result when used for screening purposes. Taking temperature at the forehead may be preferable when compared to other methods because of the efficiency, speed and comfort.

Operating Principle

All objects, solid, liquid or gas, emit energy by radiation. The intensity of this energy depends on the temperature of the object. The Non-Contact Forehead Infrared Thermometer works by detecting the radiation energy being emitted by the arterial blood flow in the forehead, which is in close proximity to the heart and runs just below the skin surface. When the radiation sensor of the thermometer is activated, the forehead temperature measurement is taken by detecting the infrared heat generated by the arterial blood flow.

Temperature Modes and Functions

To prepare the Non-Contact Infrared Forehead Thermometer for the first use, start by opening the battery compartment and inserting new batteries. Be sure to observe the correct polarity. Before using the device, allow it to acclimate to the screening room temperature for 10-15 minutes.



Press the measurement trigger to power on the device. The LCD screen will display “----°C” or “---°F”. This **Home Screen** must be displayed before programming or taking temperature measurement. (The device will enter sleep mode after 30 seconds. Press the measurement trigger to “wake up” the device.)

Setting the Mode

- To set the mode, press the measurement trigger to go to **Home Screen**.
- Press the **MODE** button. The LCD screen will display **Body**. This is the default setting. If the device will be used to measure body temperature, leave it on **Body** mode.
- The device also measures ambient (room) and surface temperature. To switch the mode to **Room**, press the **MODE** button twice. Press the **MODE** button three (3) times for the **Surface** mode.

F1: Choosing the Temperature Measurement Scale

- To choose the measurement scale, press the measurement trigger to go to **Home Screen**.
- Press and hold the **MODE** button until **F!** is displayed on the LCD screen. Press the **MODE** button to switch between Celsius and Fahrenheit.
- Save the measurement scale by pressing the **MEM** button until the **Home Screen** is displayed.

F2: Alarm Setup

- To program the alarm, press the measurement trigger to go to **Home Screen**.
- Press and hold the **MODE** button until **F!** is displayed on the LCD screen. Press the **MEM** button, then **MODE**. Select the alarm temperature, by pressing **MODE** until the desired alarm temperature is reached. The range is 37.3°C and 39.1°C (99.1°F to 102.4°F)
- Save the alarm setting by pressing the **MEM** button until the **Home Screen** is displayed.
- To activate the audible alarm, press $\llcorner \text{) } \gg$). The LCD screen will display **ON**. Press $\llcorner \text{) } \gg$) again to turn alarm **OFF**. The default alarm temperature is 38°C (100.4°F).

F4: Instructions for Calibration

- To calibrate the Non-Contact Infrared Forehead Thermometer, press the measurement trigger to go to **Home Screen**.
- Next, take the temperature of an individual using a CLINICAL THERMOMETER; the result will be 37.5°C (99.5°F) for example.
- Take the temperature of the same individual using The Non-Contact Infrared Forehead Thermometer. Maintaining a distance of 3cm to 5cm (1.2in to 2in), aim the device at the forehead. Press the measurement trigger to take

the temperature. Be sure to remove any obstacle which could alter the measurement, such as hair, perspiration, etc.

- If the result is the same as the CLINICAL THERMOMETER, The Non-Contact Forehead Infrared Thermometer is properly set and ready to use.
- If the result is NOT the same as the CLINICAL THERMOMETER, adjust the temperature on The Non-Contact Infrared Forehead Thermometer, by subtracting or adding degrees as appropriate.
- To add or subtract degrees, press the **MODE** button for 2 seconds. Until the LCD screen displays **FI**. Press the **MEM** button until **F4** displays on the LCD screen. Press the **MODE** button until the appropriate offset value is reached. The offset value range is -3° to 3°C (-5.4°F to 5.4°F). Save the offset value by pressing the **MEM** button until the **Home Screen** is displayed.
- To verify the calibration is complete, re-take the temperature of the same individual using the Non-Contact Infrared Forehead Thermometer.
- **Note:** Whenever a clinical thermometer and the Non-Contact Forehead Infrared Thermometer produce different results, or if there is a substantial change in environmental temperature, repeat the calibration steps.

Helpful Tips for Reliable Results

Considerations for Individual Being Screened:

1. Ensure individual does not participate in rigorous activity prior to the temperature measurement.
2. Remove hair, perspiration, make-up or clothing from forehead.
3. The following physiological variations in temperature must be considered when evaluating the temperature results:
 - Temperature increases by 0.5°C (1°F) between 6:00am and 3:00pm
 - A woman's body temperature is approximately 0.2°C (0.4°F) higher than a man's body temperature.
 - A woman's body temperature varies in accordance with the ovarian cycle. It rises by 0.5°C (1°F) in the second half of the cycle and during the early stages of pregnancy.
 - When sitting, the body temperature is approximately 0.3°C to 0.4°C (0.6°F to 0.72°F) lower.
 - The temperature of the human body varies throughout the day. It can also be influenced by numerous external factors such as age, sex, type and thickness of skin.

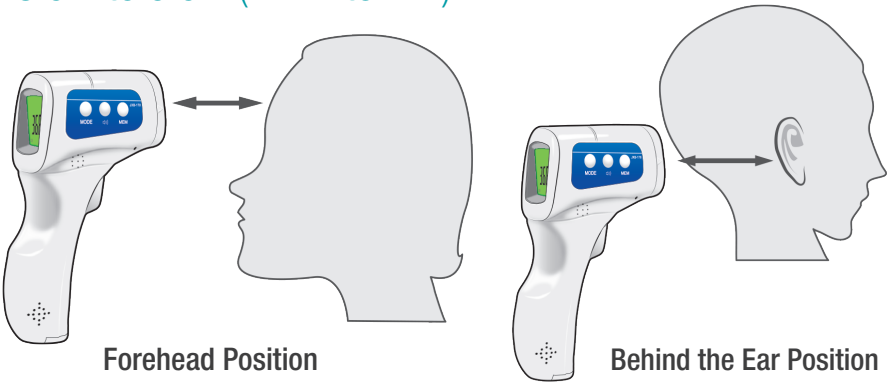
Environmental Operating Conditions:

- Avoid extreme room temperature (too hot or cold).
- Avoid air flux (i.e. fan, heater, air conditioning).
- Whenever there is a significant change in the ambient temperature of the screening room, allow device to acclimate for 10 to 15 minutes before using.

Instructions for Taking Body Temperature

- To take the body temperature of an individual, press the measurement trigger to go to **Home Screen**.
- From no more than 3cm to 5cm (1.2in to 2in), aim the device at the middle of the forehead of the individual being screened. Press the measurement trigger to take the temperature.
- The temperature will be displayed in one second. (See the diagram below for the device positioning).
- When there is perspiration on the forehead, temperature may also be taken behind the ear lobe. Ensure there is no hair, perspiration, cosmetics or clothing covering the area.
- Allow 3 to 5 seconds between temperature measurements.
- If there is no activity for 30 seconds, the device will automatically shut off. “Wake up” the device, by pressing the measurement trigger.

3 cm to 5 cm (1.2 in to 2 in)



Normal Temperatures According To Measurement Method

Measurement Method	Normal Temp °C	Normal Temp °F
Rectal	36.6 to 38	97.8 to 100.4
Oral	35.5 to 37.5	95.9 to 99.5
Axillary	34.7 to 37.3	94.4 to 99.1
Ear	35.8 to 38	96.4 to 100.4
Temporal	35.8 to 37.8	96.4 to 100.04

The temperature of the human body varies throughout the day. It can also be influenced by the following factors: age, sex, type and thickness of skin.

Normal Temperatures According To Age		
Age	Temp °C	Temp °F
0-2 years	36.4 to 38.0	97.5 to 100.4
3-10 years	36.1 to 37.8	97.0 to 100.0
11-65 years	35.9 to 37.6	96.6 to 99.7
> 65 years	35.8 to 37.5	96.4 to 99.5

Other Uses

The Non-Contact Forehead Infrared Thermometer can also be used to measure the temperature of a baby-bottle or bath (Surface mode), or ambient temperature (Room mode).

Memory

- The Non-Contact Forehead Infrared Thermometer retains the last 32 measurements.
- To display the last temperature taken, press the measurement trigger to go to **Home Screen**, then press the **MEM** (Memory) button.
- Continue to press the **MEM** button to view more saved temperature measurements.
- To delete saved measurements, press the **MEM** button and hold. All data in the memory will be deleted and **CLr** will display on the LCD screen. To confirm the memory has been erased, press the **MEM** button again, and the display will show **CLr**.

Replacing Batteries

- When the LCD screen displays the flashing , the batteries are depleted and should be replaced.
- To replace batteries, open the battery compartment and remove the old batteries. Insert new batteries, observing the correct polarity. A mistake could cause damage to the apparatus and compromise the device warranty.
- Wait 10-15 minutes after replacing batteries for the device to acclimate to ambient temperature.
- Never use rechargeable batteries. Use only disposable AA batteries.



Maintenance

- The protective glass covering the lens is the most important and fragile part of device. Prevent damage to this area.
- Clean the glass with cotton swab, moistened with 95% Isopropyl alcohol.
- Only use batteries that meet technical requirements. (2 AA batteries)
- Remove batteries when device will not be used for an extended period.

Troubleshooting

If problems occur while using device, please refer to this guide for help

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The screen displays a temperature higher than 43°C (109.4°F)

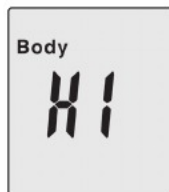
Ensure the device is in **Body** mode.

The screen displays a temperature lower than 32°C (89.6°F)

Ensure the device is in **Body** mode.

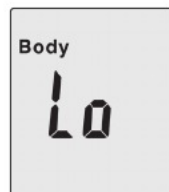
The screen displays **Hi**

The LCD screen displays **Hi** when the temperature is above 43.0° C (109.4° F) in **Body** mode.



The screen displays **Lo**

The LCD screen displays **Lo** when the temperature is lower than 32°C (89.6° F) in **Body** mode.



Troubleshooting, continued

Reasons Lo or Hi displayed on screen:	Solution:
Temperature reading hampered by hair, perspiration, cosmetics, etc.	Remove all obstructions prior to taking temperature.
Temperature hampered by an air flux.	Avoid air flux, as this may interfere with infrared system.
The measuring distance is too far.	Maintain a distance of 3 cm to 5 cm (1.2 in to 2 in).
Device has not acclimated to the screening room temperature.	Wait 15 minutes and repeat temperature measurement.

Contact Tech Support at:

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Warranty

The Non-Contact Forehead Infrared Thermometer was designed for long term professional use, and has a limited warranty period of 1 year or 100,000 measurements against defects in material and workmanship from the date of purchase.

Compliance

- EU Directive 93/42/EEC concerning medical products
- ISO 80601-2-56
- European Standard EN60601-1-2

EMC Declaration			
Guidance and manufacturer's declaration – electromagnetic immunity			
The "JXB-178" is intended for use in the electromagnetic environment specified below. The customer or the user of the "JXB-178" should ensure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	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 power supply lines ±1 kV for input/output lines	Not Applicable	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	Not Applicable	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on 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 sec	Not Applicable	Mains power quality should be that of a typical commercial or hospital environment. If the user of the "JXB-178" requires continued operation during power mains interruptions, it is recommended that the "JXB-178" be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) 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 hospital environment.
NOTE UT is the a.c. mains voltage prior to application of the test level.			



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