

**BIOS**  
*Diagnostics*™



**1 SECOND  
EAR  
THERMOMETER**  
Instruction Manual  
Model: 235DI



**235DI**

**1 Second Ear Thermometer  
Instruction Manual**

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## **1 Second Infrared Ear Thermometer**

Thank you for purchasing the BIOS Diagnostics™ 1 Second Ear Thermometer. This Ear Thermometer is a high quality product incorporating the latest technology and tested in accordance with international standards. With its unique technology, this thermometer can provide safe, accurate and reliable readings with each measurement on people over 2 years of age.

### **1. Features**

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#### **Multiple Uses (Wide Range Measurement)**

This thermometer offers a wide measurement range feature from 0°C to 100.0°C (32.0°F to 212.0°F), meaning the unit can be used as an ear thermometer to measure body temperature or it can be used to measure surface temperature of the following:

- Milk surface temperature in a baby's bottle
- Surface temperature of a baby's bath
- Ambient temperature

#### **Measurement in 1 Second**

The innovative infrared technology allows measurement of ear temperature in only 1 second.

#### **Multiple Reading Recall**

Users will be able to recall the last 30 readings when entering the recall mode, enabling efficient tracking of temperature variations.

#### **Fever Alarm**

10 short beeps and a red LCD backlight alerts the patient that he/she may have a temperature above 37.5°C / 99.5°F.

#### **Illuminated Probe**

This thermometer includes a probe LED light which enables the user to find the correct ear position in the dark. The probe will illuminate for approximately 10 seconds when the thermometer is turned ON.

#### **“Clean Me” Technology**

After each temperature measurement “clean me” will flash on the LCD to remind users to clean the probe. See Care and Cleaning section.

#### **Accurate and Reliable**

The unique probe assembly construction incorporates an advanced infrared sensor, ensuring that each measurement is accurate and reliable.

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

## **2. Important Safety Instructions**

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This instrument may only be used for the purposes described in this booklet. The manufacturer cannot be held liable for damage caused by incorrect application.

**Never immerse this instrument in water or other liquids. For cleaning please follow the instructions in the «Care and Cleaning» section.**

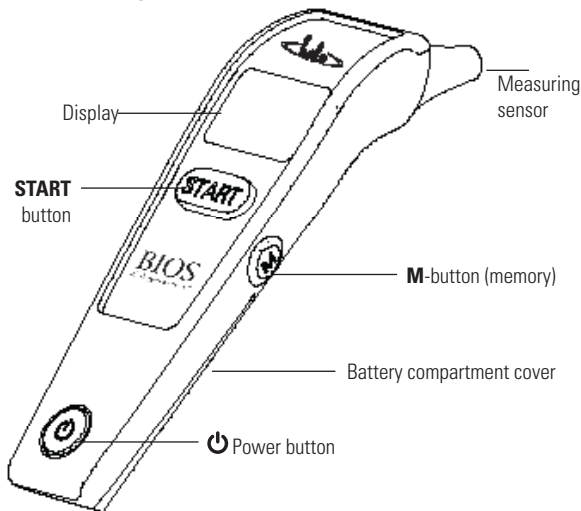
- **Do not** use the instrument if there are any signs of damage. **Do not** attempt to repair the instrument.
- Earwax in the ear canal may cause a lower temperature reading, therefore it is important to ensure the user's ear canal is clean.
- If the measurement result is not consistent with the user's finding or suspiciously low, repeat the measurement every 15 minutes or double check the result by another core body temperature measurement.
- This thermometer consists of high quality precision parts. **Do not** drop this instrument. Protect it from severe impact and shock.
- Keep the thermometer away from direct exposure to the sun and keep it in a dust-free dry area.
- If the instrument is not going to be used for a prolonged period of time the battery should be removed.
- Battery cover should be installed correctly before use to avoid potential risk of electric shock.

### **⚠ WARNING:**

- Use of this thermometer is not intended as a substitute for consultation with your physician.
- Ensure that children do not use the instrument unsupervised; some parts are small enough to be swallowed.
- It is not recommended to use infrared thermometers on children under 2 years of age.
- Infrared thermometers should not be used to manage important health concerns, and therefore parents should not rely solely on temperature readings to evaluate the status of your child's health. If you have any concerns, consult with your doctor.
- Using the unit in the immediate vicinity of mobile phones, microwave appliances or other devices with strong electromagnetic fields may result in impaired functioning.

### 3. Product Diagram

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### 4. How This Thermometer Measures Temperature

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This thermometer measures infrared energy radiated from the eardrum and the surrounding tissue. This energy is collected through the lens and converted to a temperature value. The measured reading obtained directly from the eardrum (Tympanic Membrane) ensures the most accurate ear temperature.

Measurements taken from the surrounding tissue of the ear canal generate lower readings and may result in misdiagnosis of fever.

### 5. Setting Date And Time

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1. When using the Ear Thermometer for the first time please remove the plastic strip located in the battery compartment.
2. Once the Ear Thermometer is powered up, the year will flash on the screen. Press the **START** button to set the correct year. Press the **M**-button. This will confirm the year.
3. Next the month and day will appear on the screen. Press the **START** button to set the month digits. Press the **M**-button to confirm.
4. Follow the same process to set the day, 12/24 hour mode, hours and minutes.



- Once you have set the minutes and pressed the **M**-button the date and time are set and the time is displayed.
  - If no button is pressed for 20 seconds, the thermometer automatically switches to the measuring screen and you are ready to take a reading.
  - To cancel time setup, press the **⏻** button during time setup. The LCD will show Date / Time icons with "--:--". Press the **⏻** Power button to start the measurement. If no further action is taken within 60 seconds, the thermometer will automatically turn OFF.
  - If the time and date need to be changed at a later time, press and hold the **M** button, while the thermometer is OFF, until the year digits start to flash. Follow steps above to update the time and date.

## 6. Directions For Use

**PLEASE NOTE:** When you turn the thermometer on by pressing the **⏻** button, all segments of the screen will be shown for 1 second and one beep is heard. **(Figure 1)**



Figure 1

- When the thermometer is ready to take a reading the °C or °F icon will be flashing, and you will see -- - on the screen.
- Straighten the ear canal by gently pulling the middle of the ear back and up.
- Place the probe firmly into the ear canal, press the **START** button and keep the probe in the ear until the thermometer beeps to signal the completion of the measurement. The probe LED light will turn OFF once the **START** button is pressed to take the measurement.



## 7. Setting The Beeper

- When the thermometer is OFF, press and hold the **⏻** button for 5 seconds to set the beeper.
- Press the **⏻** button again to either turn the beeper ON or OFF. The beeper is activated when the beeper icon is not crossed out. **(Figure 2)**

**NOTE:** If no button is pressed for 5 seconds, the thermometer automatically switches to measuring mode.



Figure 2

## 8. Fever Alarm

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If the thermometer detects a body temperature greater than 37.5°C/99.5°F, it will make 10 short beeping sounds and the LCD will light up RED, indicating a potential fever.

## 9. Changing Between Celsius And Fahrenheit

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1. To switch the display between °C and °F, simply turn OFF the unit, press and hold the **START** button for 5 seconds; after 5 seconds, the current measurement scale (°C or °F icon) will flash on the display (**Figure 3**).
2. Change the measurement scale between °C and °F by pressing the **START** button. When the measurement scale has been chosen, wait for 5 seconds and the unit will automatically enter the ready for measuring mode.



Figure 3



## 10. Memory Storage

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This thermometer recalls the last 30 readings.

- **Recall mode:** Press the **M**-button to enter Recall mode when the power is OFF. The memory icon << M >> will flash. (**Figure 4**)
- **Reading 1 - the last reading:** Press and release the **M**-button to recall the last reading. Number 1 and a flashing M are displayed. (**Figure 5**)
- The last reading displays the date and time of reading and the temperature taken. (**Figure 6**)
- **Reading 30 - readings in succession:** Press and release the **M**-button consecutively to recall the last 30 readings in succession. Pressing and releasing the **M**-button after the last 30 readings have been recalled will resume the above sequence from reading 1.
- **Deleting memory:** If you want to permanently delete all stored memory in the thermometer, press and hold the **START** button, when in memory mode, until CLR appears. Then press the **START** button again, the screen will show PASS and the memory will be deleted.



Figure 4



Figure 5



Figure 6

## 11. Measuring Surface Temperatures

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1. Press the **⏻** button, after one beep sounds the thermometer is ready for use.
2. Aim the thermometer probe at the desired surface and press the **START** button.

## 12. Care And Cleaning

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Use an alcohol swab or cotton tissue moistened with alcohol (70% Isopropyl) to clean and disinfect the thermometer casing and the measuring probe. 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 probe lens and the display.

It is important to clean the thermometer before and after each use. A build up of ear wax on the lens reduces the infrared picked up by the sensor, which can result in lower temperatures. Ear wax is also acidic and can corrode the lens of the thermometer if not cleaned regularly.

## 13. Battery Replacement

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This thermometer is supplied with one lithium battery type, CR2032.

1. The battery needs replacing when only the ▼ icon is shown on the display. **(Figure 7)**
2. Loosen the screw with a screwdriver, and lift the screw up manually, then remove the battery cover by sliding in the direction shown. Remove the battery and replace with a new one.










Figure 7



**Note: Battery cover should be installed correctly before use to avoid potential risk of electric shock**




## 14. Error Messages

Display	Error
	<b>Measured temperature too high:</b> Displays "H" when measured temperature is higher than 100.0°C / 212°F
	<b>Measured temperature too low:</b> Displays "L" when measured temperature is lower than 0°C / 32°F
	<b>Ambient temperature too high:</b> Display "H" when ambient temperature is higher than 40.0°C / 104.0°F.
	<b>Ambient temperature too low:</b> Displays "L" when ambient temperature is lower than 10.0°C / 50.0°F.
	<b>Error function display:</b> The system has a malfunction
	<b>Blank display:</b> Check if the battery has been loaded correctly. Also check polarity of the battery.
	<b>Flat battery indication:</b> If only the "▼" icon is shown on the display, the battery should be replaced immediately.


## 15. Technical Specifications


<b>Type</b>	1 Second Ear Thermometer 235DI
<b>Measurement Range</b>	0°C to 100.0°C/32°F to 212.0°F
<b>Resolution</b>	0.1°C/°F

<b>Measurement Accuracy</b>	Laboratory: ± 0.2°C, 32°C to 42.2°C/ ± 0.4°F, 89.6°F to 108.0°F
<b>Display</b>	<b>Liquid Crystal Display</b> , 4 digits plus special icons
<b>Acoustic</b>	<ul style="list-style-type: none"> <li>The unit is turned ON and ready for the measurement: 1 short beep</li> <li>Complete the measurement: 1 long beep (1 second) if the reading is less than 37.5°C/99.5°F, 10 short beeps sound, if the reading is equal to or greater than 37.5°C/99.5°F</li> <li>System error or malfunction: 3 short beep sounds</li> </ul>
<b>Memory</b>	<ul style="list-style-type: none"> <li>Auto-Display the last measured temperature</li> <li>30 readings recall in the Memory Mode</li> </ul>
<b>Backlight</b>	<ul style="list-style-type: none"> <li>The display light will be <b>GREEN</b> for 1 second, when the unit is turned ON.</li> <li>The display light will be <b>GREEN</b> for 5 seconds, when a measurement is completed with a reading less than 37.5°C/99.5°F</li> <li>The display light will be <b>RED</b> for 5 seconds, when a measurement is completed with a reading equal to or higher than 37.5°C/99.3°F</li> </ul>
<b>Operating Temperature</b>	10°C to 40°C/50°F to 104°F 15% - 95% relative maximum humidity
<b>Storage Temperature</b>	-25°C to 55°C/-13°F to 131°F 15% - 95% relative maximum humidity
<b>Automatic Switch-Off</b>	Approximately 1 minute after last measurement has been taken.
<b>Battery</b>	CR2032 Battery 3V - at least 700 measurements
<b>Dimensions</b>	139 (L) x 39 (W) x 42 (H) mm
<b>Weight</b>	54.5 g (with battery), 51 g (without battery)
<b>Reference to Standards</b>	EN 12470-5; ASTM E1965; IEC 60601-1; IEC 60601-1-2 (EMC), IEC 60601-1-11 This device complies with the requirements of the Medical Device Directive 93/42/EEC.

 Follow instructions for use. This document provides important product operation and safety information. Please read this document thoroughly before using the device and keep for future reference.

 Type BF applied part

 Batteries and electronic devices must be disposed of in accordance with the locally applicable regulations, not with domestic waste.

 IP22: Protected against solid foreign objects of 12.5 mm diameter and greater. Protected against vertically falling water drops when the device is tilted up to 15°.

## 16. 5 Year Warranty

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BIOS Diagnostics™ 1 Second Ear Thermometer has a 5 year warranty to be free of manufacturing defects for the life of the original owner. The warranty does not cover damage from misuse or tampering.

### 100% Satisfaction Guarantee

If at any time, you are not completely satisfied with the performance of this device, call our BIOS Medical Hotline and speak with a customer service representative, who will make arrangements to have the device repaired or replaced to your full satisfaction.

If you have questions regarding the operation of your thermometer call the **BIOS Medical Hotline: 1-866-536-2289**

Should repair be necessary, return the unit with all component pieces. Enclose proof of purchase and \$5.00 for return shipping and insurance. Ship the unit **prepaid** and insured (at owners option) to:

Repair Department  
16975 Leslie Street  
Newmarket, ON L3Y 9A1  
[www.biosmedical.com](http://www.biosmedical.com)  
Email: [support@biosmedical.com](mailto:support@biosmedical.com)

Please include your name, return address, phone number, and email address. Thermor will repair or replace (at Thermor's option) free of charge any parts necessary to correct the defect in material or workmanship.

Please allow 10 days for repair and return shipping.

BIOS | Medical

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**THERMOR LTD.**

16975 LESLIE STREET

NEWMARKET, ON L3Y 9A1

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