

ennoLogic[®]

Body Infrared Thermometer eT210B



User Manual

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Important: Read this First!

This thermometer reads **skin surface** temperature and **extrapolates** body temperature from that reading. It does **not** read body temperature **directly**. **All** non-contact infrared thermometers that measure body temperature work this way.

To get an accurate reading, point the thermometer at the side of the forehead or behind the ear where the skin temperature tends to be constant.

That skin temperature will always be at least several degrees lower than core body temperature, for example 92°F/33.3°C. A “body” or “forehead” infrared thermometer estimates core body temperature from the skin surface temperature reading.

So instead of displaying, for example “92°F/33.3°C”, the actual surface temperature of the forehead, it applies a formula to this reading to calculate body temperature, and displays for example “98.3°F/36.8°C”. This is an **estimate** of core body temperature based on the **typical average** relationship between forehead surface temperature and core body temperature.

Skin surface temperature can and does **fluctuate** and this may significantly impact the reading. For example, exposure to hot or cold weather can cause the forehead temperature to be higher or lower, and the derived and displayed core body temperature will be off.

The two most important points to understand are 1) body temperature displayed by this thermometer is an **estimate derived from skin temperature**, and 2) skin temperature can and does **fluctuate** based on **ambient temperature and other factors**, and will change the thermometer's body temperature reading. This means for best results, temperature should be taken at room temperature when subjects are at rest. Also, multiple readings should be taken to find an average.

FOR THESE REASONS, USE THIS THERMOMETER ONLY FOR PRELIMINARY TEMPERATURE SCANS. NEVER DIAGNOSE BASED SOLELY ON READINGS FROM THIS THERMOMETER. ALWAYS CONFIRM WITH A CONTACT THERMOMETER FIRST.

Introduction

Thank you for purchasing the ennoLogic® Body Infrared Thermometer eT210B. This thermometer is a handheld non-contact body infrared thermometer that works best when used to measure the temporal artery area of the forehead. This thermometer has two measurement modes: body temperature and surface temperature. In body temperature mode it extrapolates body temperature from the surface temperature of the skin. Body temperature readings are displayed in three different backlight colors (green, orange and red).

In surface temperature mode no extrapolation is made and the surface temperature is displayed directly.

The optimal measuring distance is 2 to 3 inches. Accuracy in body temperature mode is $\pm 0.6^{\circ}\text{F}$ ($\pm 0.3^{\circ}\text{C}$).

This thermometer can store up to 34 individual body temperature readings and has additional features including high and low alarm and auto shut off.

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Instrument Description

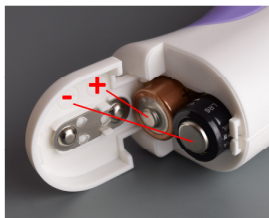
Main User Elements

1. LCD Display
2. Backlight Button
3. RIGHT Button
4. LEFT button
5. MODE Button
6. Infrared Sensor
7. Trigger Button
8. Battery Cover



Battery Installation and Replacement

The eT210B body infrared thermometer requires 2 AA batteries to operate. The battery compartment is located in the handle of the unit, and the lid is located at the base of the handle. Slide the lid backward to open the battery compartment. Insert two AA batteries paying attention to the polarity indicators. Close the lid securely. After installing new batteries, wait 10 minutes before using the thermometer to ensure accuracy.



Replace the batteries if you see the “Battery Low” symbol at the bottom of the display.

How to Use Your eT210B Thermometer

The ennoLogic eT210B non-contact infrared thermometer is designed for use in two different measuring modes, body temperature measurement and surface temperature measurement.

Body Temperature Measurement Mode

The body temperature measurement mode measures temperatures in a range from 90°F to 109°F (32°C to 43°C).

In this mode the thermometer extrapolates body temperature from skin surface temperature readings.

When the thermometer is in this mode, the word “Body” will display in the top left corner. To change the mode, pull the trigger button to turn the unit on, then press the MODE button once.

When operated in body temperature mode, the eT210B will display temperature readings on the LCD display with backlight colors in green (normal), orange (elevated) or red (high), depending on the temperature reading. When reading temperatures outside of this body temperature range the display will show “Lo” in green, or “Hi” in red.

Surface Temperature Measurement Mode

The surface temperature measurement mode measures temperatures in the range of 32°F to 212°F (0°C to 100°C).

In this mode the thermometer takes readings of surface temperatures directly.

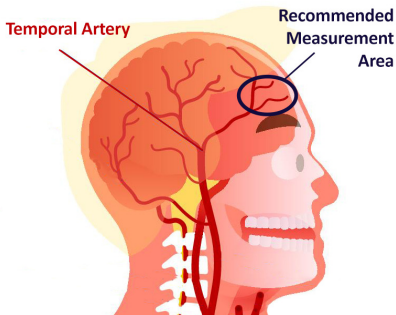
When the thermometer is in this mode, the word “Surface” will display in the top left corner. To change the mode, pull the trigger button to turn the unit on, then press the MODE button once.

When reading temperatures outside of the surface temperature range the display will show “Lo” or “Hi”. In both cases the backlight will remain green.

How to Take a Body Temperature Reading

Pull the trigger button to turn the thermometer on. Make sure the thermometer is in body temperature measurement mode, the display should show “Body” in the upper left corner. If it shows “Surface” instead, switch to body temperature measurement mode by pressing the MODE Button once.

Aim the thermometer at the side of the forehead or the area behind the ear. Both of these areas of the body have fairly



stable surface skin temperatures and are good target areas for taking a body temperature reading.

Hold the thermometer at a distance of 2 to 3 inches from the skin. Pull the trigger and within half a second the display will show the body temperature that was derived from measuring the surface temperature of the skin. If sound output is enabled the thermometer will beep to indicate that the reading was taken.

If the measured body temperature is within the normal range (96.8°F-99.5°F/36°-37.5°C), the backlight will remain green. If it is elevated (99.5°F-100.3°F/37.5°C-38°C) the backlight will change to orange, and if it's high (>100.3°F/38°C), it will change to red.

If the measured temperature is below 96.8°F/36°C the LCD will show "Lo", if it is above 109°F/43°C the LCD will show "Hi".

The display will also show "Lo" if the attempt to take a reading was unsuccessful. Make sure that the measurement area is not covered by hair, the skin is free of perspiration (wipe off if needed), and that no air flow is present as it could interfere with the measurement. Another potential reason for a "Lo" reading could be taking successive readings too quickly. Allow 10 to 15 seconds between readings. Also make sure your measurement distance is 2 to 3 inches.

How to Take a Surface Temperature Reading

Pull the trigger button to turn the thermometer on. Make sure the thermometer is in surface temperature

measurement mode, the display should show “Surface” in the upper left corner. If it shows “Body” instead, switch to surface temperature measurement mode by pressing the MODE Button once.

Aim the thermometer at the surface you want to measure. Hold the thermometer at a distance of 2 to 3 inches from the surface you wish to measure. Make sure there are no obstructions between the unit and the target surface. Steam, dust, and smoke can affect the measurement. Do not attempt to measure through glass. Thermal shock can cause inaccurate readings as well, make sure to let the unit warm up to room temperature before using it. Press the trigger button to take a reading. If sound output is enabled the thermometer will beep to indicate that the reading was taken.

If the measured temperature is below 32°F/0°C the LCD will show “Lo”, if it is above 212°F/100°C the LCD will show “Hi”.

Switching Temperature Units

Long-press the LEFT button until “F1” is displayed in the lower right corner. Press the RIGHT button to toggle between Fahrenheit (“32.0°F”) and Celsius (“0.0°C”). Press the trigger button to confirm the selection.

Adjusting the Body Temperature Offset

Long-press the LEFT button until F1 is displayed in the lower right corner. Press the LEFT button once briefly, the

lower right corner will now show "F2". You will now see an offset value that is added to the temperature reading and can be adjusted up or down in the range of -9.0°F to +9.0°F (-5.0°C to +5.0°C). Adjusting this offset allows you to fine tune the accuracy of your thermometer in body temperature measurement mode. This offset does not affect surface temperature mode readings. Press the RIGHT button to increase the offset value and the MODE Button to decrease it. Press the trigger button to confirm the value you entered.

Enabling/Disabling Sound Output (Beeper)

Long-press the LEFT button until F1 is displayed in the lower right corner. Press the LEFT button twice briefly, the lower right corner will now show "F3". Press the RIGHT button to toggle the beeper "On" or "Off". Press the trigger button to confirm the selection.

Switching Languages

Long-press the MODE button to toggle between English and Chinese.

Reviewing Stored Body Temperature Readings

When in body temperature measurement mode, the thermometer automatically stores each reading that was taken. It can store up to 34 readings, and after 34 readings have been taken the oldest will be overwritten.

The stored readings can be reviewed by pressing the Left or Right buttons. The number in the lower right corner indicates the memory location.

To delete a reading, long-press the RIGHT button. The display will then change to the previous stored reading.

Note that no readings are stored when in surface temperature measurement mode.

Backlight

Press and hold the backlight button to toggle the backlight on and off. In body temperature measurement mode, the backlight will change colors depending on the measured temperature (see section “How to Take a Body Temperature Reading”). In surface temperature measurement mode, the backlight will always remain green.

Auto Shut Off

After approximately 7 seconds of non-use the thermometer will automatically turn off.

Maintenance

Do not expose the thermometer to sunlight or water.

Lens Care and Cleaning

The infrared sensor is the most sensitive and fragile part of the thermometer, please treat it with care. The lens cover

may be cleaned with a cotton swab dampened with water or isopropyl alcohol.

Storage

Store the thermometer in a dry cool place at a temperature not exceeding the storage temperature range of 14°F to 140°F (-10°C to 60°C).

Specifications

Body Temperature	90°F to 109°F (32°C to 43°C)
Weight	4.5oz (127g)
Body Temperature Accuracy	±0.6°F (±0.3°C)
Surface Temperature Measurement Range	32°F to 212°F (0°C to 100°C)
Surface Temperature Accuracy	±1.8°F (±1°C)
Resolution	0.1°F (0.1°C)
Response Time	0.5 seconds
Measuring Distance	2 to 3 inches (5 to 8 cm)
Power	2x 1.5V AA battery (included), auto power off after 7 seconds
Operating Temperature	50°F to 104°F (10°C to 40°C)
Storage Temperature	14°F to 140°F (-10°C to 60°C)
Size	5.7" x 3.2" x 1.6" (145mm x 80mm x 40 mm)

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