

Digital Infrared Ear Thermometer bosotherm medical

Instruction Manual

We congratulate you on your purchase of the boso Infrared Ear Thermometer.

The digital Infrared Ear Thermometer bosotherm medical is a high quality product incorporating the latest technology and tested in accordance with international standards. With its unique technology, the bosotherm medical can provide a stable, heat-interference-free reading with each measurement. The instrument performs a self-test every time it is switched on. This guarantees the specified accuracy of every measurement.

The boso digital Infrared Ear Thermometer bosotherm medical is intended for the measurement and monitoring of human body temperature. It is intended for use on people of all ages.



Please read these instructions carefully before using the instrument and keep them in a safe place.

To get help concerning usage or maintenance please contact your dealer or the manufacturer.

An unexpected operating condition or an incidence which has worsened the health condition or could have worsened the health condition should be reported to the manufacturer immediately.

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The device must be installed and put into operation in accordance with the instructions in this manual.

Wireless communication devices, such as home networking devices, mobile phones, cordless phones and their base stations, walkie-talkies can affect this thermometer. Therefore, a minimum distance of 11 feet should be kept from such devices.

1. The Advantages of your bosso Digital Infrared Ear Thermometer

Multiple Use (Wide Range Measurement)

The bosotherm medical offers a wide measurement range from 0°C to 100.0°C (32.0°F to 212.0°F); the product can be used as an ear thermometer to measure body temperature of children and adults. In addition to this it also can be used to measure surface temperature of:

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

Measurement in 1 second

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

Accurate and reliable

Due to the unique probe assembly construction, the advanced infrared sensor and the complete calibration process this unit offers a very accurate and reliable ear temperature measurement.

Auto-Display Memory

The product displays the last reading automatically for 2 seconds when the unit is switched ON.

Safe and Hygienic

- No risk of broken glass or mercury ingestion.
- Disposable probe covers make bosotherm medical completely hygienic.

Fever Alarm

10 short beeps alert the patient that he/she may have fever

2. Important Safety Instructions

- This device can be used at home and in hospital.
- The user should be at least 11 years old.
- The patient can be the user.
- Don't use the thermometer in high humidity environments.
- Before use, the device should be acclimated to the ambient temperature (that is, room temperature). If a change in ambient temperature should occur, such as due to a temperature difference between the storage location and the usage location of the device, you should wait at least 30 minutes before use so that

the device can adapt to a stable ambient temperature (usage location)!

- Do not use the thermometer immediately after the following:
 - Drinking or Eating
 - Exercising
 - Nursing a baby
- If the measurement result should not correspond with the condition of the patient or should be unusually low, the measurement should be repeated at 15 minute intervals or compared to a different measurement of core body temperature.
- Never use the thermometer for purposes other than those it has been intended for. Please be careful when using on children.
- Always use the thermometer with a new undamaged Probe Cover for each measurement to prevent infection. Do only use original boson Probe Covers (520-7-086).
- Never immerse the bosontherm medical into water or other liquids (not waterproof). For cleaning and disinfecting please follow the instructions in the "Cleaning and Storage" section.
- Keep the instrument and the probe covers away from direct exposure to the sun and keep it in a dust-free, dry area at the temperature between 10° - 40° (50°F - 104°F).
- Do not use the thermometer if there are signs of damage on the measuring tip or on the instrument itself. If damaged, do not attempt to repair the instrument! Please contact your authorized dealer or directly boson.
- This boson Digital Infrared Ear Thermometer consists of high-quality precision parts. Do not drop the instrument! Protect it from severe impact and shock. Do not twist the instrument and the measuring probe!
-  **WARNING:** The measurement results given by this device is not a diagnosis.
It is not replacing the need for the consultation of a physician, especially if not matching the patient's symptoms.
Do not rely on the measurement result only, always consider other potentially occurring symptoms and the patient's feedback.
Calling a doctor or an ambulance is advised if needed.

WARNING:

- Please keep the probe covers out of the reach of children.
- Use of this IR thermometer is not intended as a substitute for consultation with your physician.
- Thermometer is not waterproof! Please NEVER immerse into liquids!
- Earwax in the ear canal may cause a lower temperature reading. Make sure that the ear canal is clean in order to avoid an inaccurate reading.

3. Product Description

- (1) Probe Cover
- (2) Probe
- (3) Start button
- (4) LCD Display
- (5) O/I button (ON/OFF)
- (6) Battery Cover

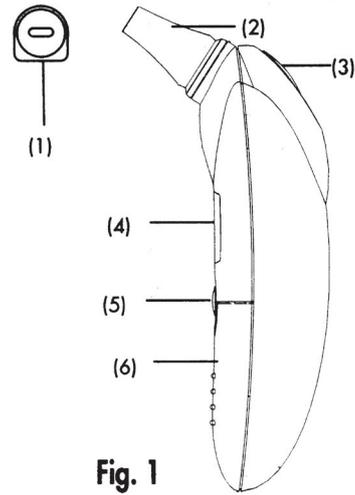
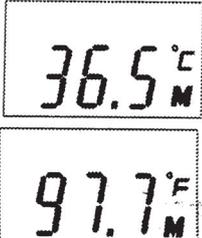
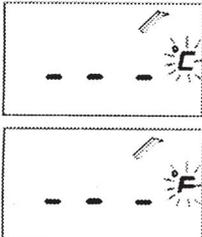
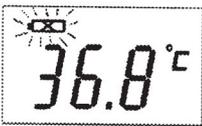


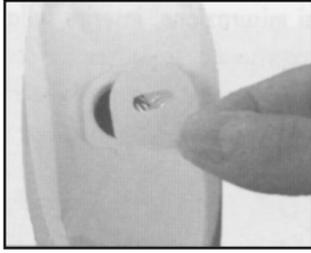
Fig. 1

4. Control Displays and Symbols

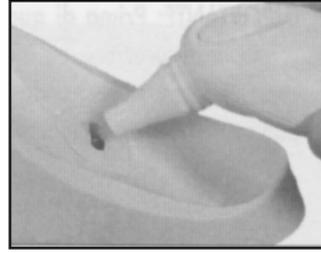
LCD Display	Display Meaning	Description
	All segments displayed	Press the O/I button to run on the unit, all segments will be shown for 2 seconds.
	Memory	The last reading will be shown on the display automatically for 2 seconds.
	Ready	The unit is ready for the measurement, the °C or °F icon will keep flashing.
	Measurement complete (Measurement of body temperature)	The reading will be shown on the LCD display with the °C or °F icon flashing, the unit is ready again for the next measurement.
	Measurement complete (Measurements other than body temperature) Attention: range of tolerance $\pm 1\text{ }^{\circ}\text{C}$ resp. $\pm 2^{\circ}\text{ F}$	The reading will be shown on the LCD display with the °C or °F icon flashing, the unit is ready again for the next measurement.
	Low battery indication	When the unit is turned on, the battery icon will keep flashing to remind the user to replace the batteries.

5. How to Reload a new Probe Cover

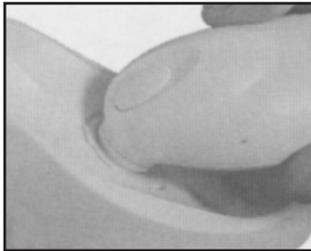
(Use only original boso Probe Covers (520-7-086))



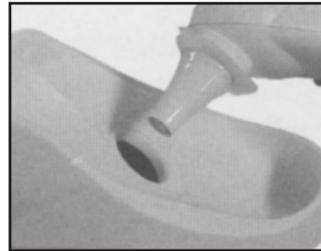
(1) Place a probe cover onto the storage case hole with paper side upwards.



(2) Take the unit and **vertical-ly** penetrate the probe into the **center** part of the probe cover.



(3) **Completely** push the probe into the probe cover holder.



(4) After feeling a slight click, take out the probe with cover attached tightly.

NOTE:

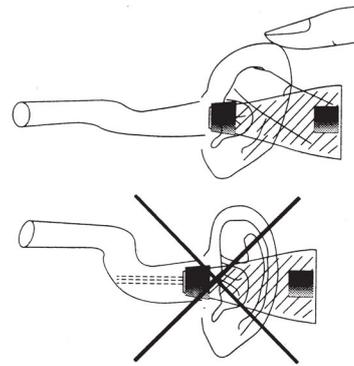
- In order to avoid cross-contamination, please reload a new probe cover for each measurement.
- Please check if the probe cover is fitted firmly before usage (**please see the diagrams below**); If the probe cover is broken, discard the probe cover and reload a new one immediately.
- **Neglect of these instructions leads to a damaging of the instrument and expiring of warranty.**



6. How the bosso Digital Infrared Ear Thermometer Measures body Temperature

The bosotherm medical 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) can ensure the most accurate body temperature. Measurements taken from the surrounding tissue of the ear canal generate lower readings and may result in misdiagnosis of a fever.

Straighten the ear canal by pulling the ear carefully to give a clean view of the ear drum and in order to avoid low readings due to the curvature of the ear canal.



7. How to measure Body Temperature

Important: Prior to the first use remove the safety strip in battery compartment.

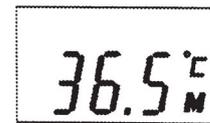
Prior to every measurement, fit a new undamaged Probe Cover on the measuring probe. Failure to do so may result in incorrect temperature measurement.

Only in the ambient temperature ranges of 10° C - 40° C (50° F - 104° F) correct measurement results could be obtained.

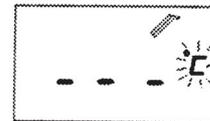
1. Press the O/I button. The LCD is activated to show all segments for 2 seconds.



2. The last measurement reading will be shown on the display automatically for two seconds with the „M” icon.



3. When the °C or °F icon is flashing, a beep sound is heard and the thermometer is ready for the measurement.



4. Straighten the ear canal by pulling the ear up and back to give a clear view of the eardrum.



5. While gently pulling the ear, insert the probe carefully into the ear canal and press the "START" button. A beep sound confirms the end of measurement.
6. Remove the thermometer from the ear canal. The LCD displays the measured temperature.

NOTE: 10 short beeps will sound when the temperature is higher than 37.5°C in order to alert the patient that he/she may have fever.



7. Replace the probe cover after each measurement. To do this, please follow the instruction in point 5 „How to reload a new probe cover?“.
- 8. In order to assure accurate readings, please wait for at least 30 sec. after 3-5 continues measurements.**
9. To repeat a measurement, please wait until the °C-/°F-Symbol starts flashing.
10. Approx. one minute after the last measurement the unit switches off automatically.

NOTE:

- Always take the temperature in the same ear, since the temperature readings may be different from the right ear and left ear.
 - Please wait for a few minutes to take the ear temperature after sleeping.
 - **In the following situations it is recommended that three temperatures in the same ear be taken and the highest one taken as the reading:**
 - 1) **New born infants in the first 100 days.**
 - 2) **Children under three years of age with a compromised immune system and for whom the presence or absence of fever is critical.**
 - 3) **When the user is learning how to use the IR thermometer for the first time until he/she has familiarized himself/herself with the instrument and obtains consistent readings.**
 - 4) **If the measurement is surprisingly low.**
- In case of doubt a comparative measurement is recommended.**

Note

Readings from different measurement sites should not be compared because the normal body temperature varies between different measurement sites and the time of the day, being highest in the evening and lowest about one hour before waking up.
Normal body temperature ranges:

- Axillar: 34.7 – 37.3 °C
- Oral: 35.5 – 37.5 °C
- Rectal: 36.6 – 38.0 °C
- bosotherm medical: 35.4 – 37.4 °C

8. How to measure Surface Temperature

Important: Prior to the first use remove the safety strip in the battery compartment.

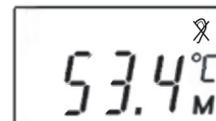
Prior to every measurement, fit a new undamaged Probe Cover on the measuring probe. Failure to do so may result in incorrect temperature measurement.

Only in ambient temperature ranges of 10° C - 40° C (50° F-104° F) correct measurement results could be obtained.

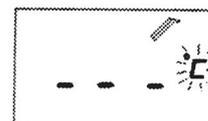
1. Press the O/I button. The LCD is activated to show all segments for 2 seconds.



2. The last measurement reading will be shown on the display automatically for two seconds with the „M“ icon.



3. When the °C or °F icon is flashing, a beep sound is heard and the thermometer is ready for the measurement.



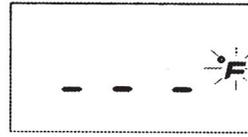
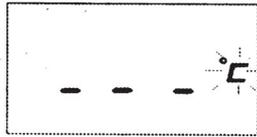
4. Keep the probe upright in approx. 5 cm distance in direction of the surface.
5. Press the „Start“-button. A beep sound confirms the end of measurement.
6. To repeat a measurement, please wait until the °C-/°F-Symbol starts flashing.
7. Approx. one minute after the last measurement the unit switches off automatically.

NOTE:

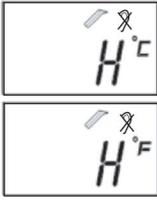
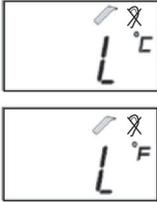
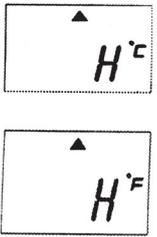
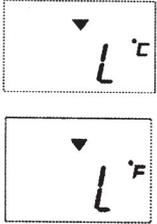
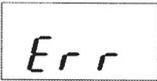
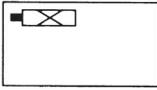
- **Please do not forget that you are only measuring the surface temperature. The inner temperature of liquid/food maybe much higher!
Therefore take care that the liquid/food is mixed thoroughly.**

9. Changing from Fahrenheit to Celsius and vice-versa

The bosotherm medical can display measurements either in Fahrenheit or Celsius. To switch the display between °C and °F, simply turn OFF the unit, press and hold the Start button for 5 seconds; When you stop pressing the Start button after 5 seconds, the current measurement scale (°C or °F icon) will be flashed on the display. Swap from °C to °F and back by pressing the start button again. When the measurement scale has been chosen, wait for 5 seconds and the unit will enter the ready for measuring mode automatically.



10. Error Messages

Display / Problem	Display Meaning	Possible cause and fault remedy
	Measured Temperature too high	Displays „H“ when measured temperature higher than 100.0 °C or 199.9 °F.
	Measured temperature too low	Displays „L“ when measured temperature lower than 0 °C or 32.0 °F.
	Ambient temperature too high	Displays „H“ in combination with the „▲“ when ambient temperature is higher than 40.0 °C or 104.0 °F.
	Ambient temperature too low	Display „L“ in combination with the „▼“ when ambient temperature is lower than 10 °C or 50 °F.
	Error function display	When item has malfunction. If malfunction occurs frequently, please contact manufacturer (see page 31)
	Blank display	Please check if the battery has been inserted corecctly. Also check poliarity (<+> and <->) of battery.
	Empty battery indication	If the battery icon is shown on the display, the batteries should be replaced immediately.

11. Cleaning and Storage

Use an alcohol sponge or cotton swab moistened with alcohol (70% Isopropyl) to clean the thermometer casing and the measuring probe. Ensure that no liquid enters the interior of the thermometer.

After cleaning the measuring sensor with alcohol, wait 5 minutes before taking the next measurement, in order to allow the thermometer to reach its operating reference temperature.

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.

Remove the battery from the instrument if it is not required for extended periods in order to avoid damage to the thermometer resulting from a leaking battery.



12. Technical Specifications

Type:	Digital Infrared Thermometer bosotherm medical
Measuring Range:	0 °C to 100.0 °C (32.0 °F to 199.9 °F)
Accuracy:	Laboratory: : ±0.2 °C, 32.0 ~ 42.2 °C (±0.4 °F, 89.6 ~ 108.0 °F) ±1°C, 0 ~ 31.9°C, 42.3 ~ 100.0 °C (±2 °F, 32.0 ~ 89.5 °F, 108.1~ 212.0°F)
Clinical repeatability:	Child: 0,11° C, Adult: 0,07° C
Display:	Liquid Cristal Display with indicating unit 0.1 °C (0.1 °F)
Memory:	Auto-Display the last measured temperature
Nite Glow:	a. The display will be lighted for 4 seconds when the unit is turned ON. b. The display will be lighted again for 5 seconds when the measurement has been completed.
Operating conditions:	10°C to 40 °C (50.0 °F to 104 °F) Relative humidity 15 to 95%
Storage conditions:	-25 °C to +55 °C (-13 °F to 131 °F) Relative humidity 15 to 95%
Automatic Switch-off:	Approx. 1 minute after last measurement has been taken.
Voltage/battery:	3 V x 1 CR2032
Service life of batteries:	at least 1,000 measurements
Applied part:	Type BF ()
Protection against water and wetness:	Keep dry. () IP 21 in accordance with IEC 60529
Dimensions:	141mm (L) x 26 mm (W) x 20 mm (H)
Weight:	45g (with battery), 40g (w/o battery)
Standards:	EN 12470-5, ASTM E1965, IEC 60601-1, IEC 60601-1-2 (EMC), IEC 60601-1-11
Expected lifetime of the equipment:	10 years

The bosotherm medical conforms to the provisions of the EU Guidelines 93/42/EEC for Class IIa medical devices.

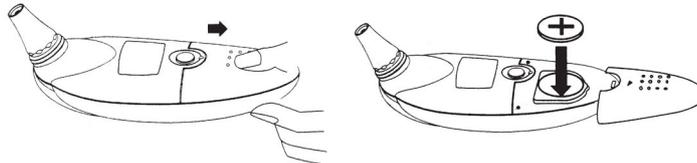
Technical changes reserved.

13. Regular Checks on the Accuracy

Regular checks on the accuracy of the measurement system should be carried out in accordance with the valid directive of the individual countries, governing this issue.

14. Replacing the Battery

The bosch Digital Infrared Thermometer is



supplied with one lithium battery, type CR2032.

Replace with a new CR2032 battery when the battery symbol appears flashing or permanently on the LCD display. To open the battery slot, press with the thumb on the marked spot and slide open the lid downwards. Change the battery (check correct polarity) and close the battery slot by sliding the lid upwards.

15. Warranty

For details on the conditions of warranty, please refer to the card "Certificate of Warranty" supplied. A warranty claim must be submitted within the warranty period. For both guarantee and repair work, please bring or send the defective thermometer carefully packed and postage paid either to your authorized dealer or directly to:

BOSCH + SOHN GMBH U. CO. KG
Bahnhofstr. 64
72417 Jungingen/Germany

Enclose either the "Certificate of Warranty" completed and stamped by the dealer or attach the sales slip/invoice.

Warranty and repair work must be undertaken by trained and authorised personnel. Do not modify this equipment without authorization of the manufacturer.

16. Care of the Environment

Used batteries and defective electronic devices do not belong into the household waste.



They can be deposited at special centres. Please contact your local authorities for information.