BIOS™ MC
Diagnostics

PEAK FLOW METER

FOR ASTHMA AND COPD



Instruction Manual
Model: PF100

biosmedical.com

11/05/25

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1. Introduction

Your new BIOS Peak Flow Meter is a high quality medical device that measures your maximum possible exhalation which is called «peak flow» (referred to in medical terms as PEF - Peak Expiratory Flow).

Regular monitoring of your peak flow is extremely useful for controlling diseases of the airways such as asthma, chronic obstructive pulmonary disease (COPD), or chronic bronchitis.* After the peak flow result is shown, a further value (for FEV1) will then be indicated. This value is also of interest for your doctor.

The measurements can be performed on your own, because the BIOS Peak Flow Meter is very simple to use. It is as suitable for children in their pre-school ages as it is for the elderly.

Because the device has an automatic memory of 240 data entries, you do not need to note the values down; simply take the device with you the next time you visit your doctor. The device can be connected to a computer, and the values can be analysed using the analyser software program.

Indications for Use:

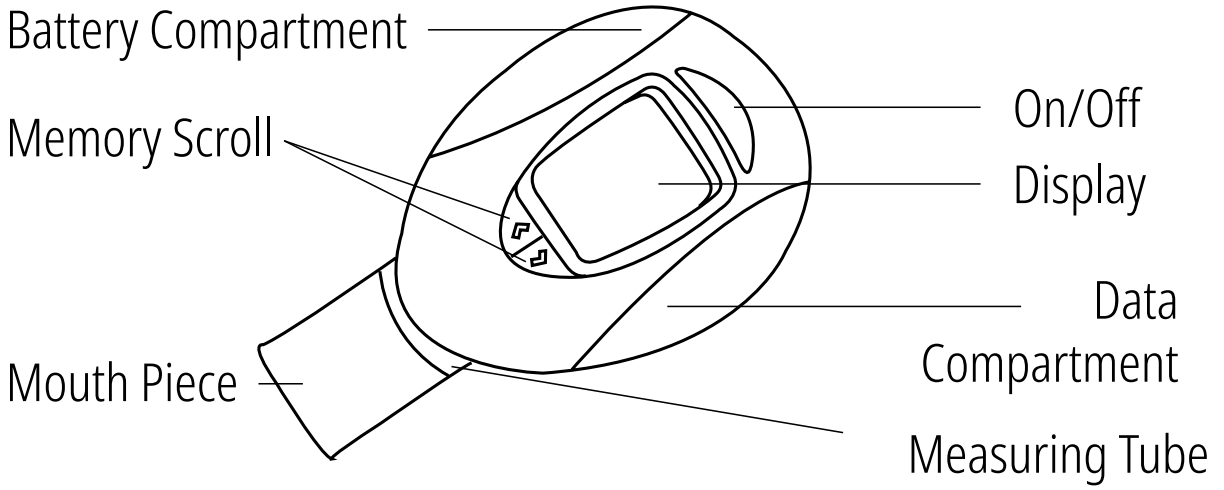
The Asthma Monitor is a medical device that measures the maximum possible exhalation also known as “Peak Flow”.

This device is intended for monitoring PEF (Peak Expiratory Flow Rate) and Forced Expiratory Volume (FEV1) for patient use at home. The device is designed for pediatric to adult patients. The simple device interface provides ease of use for pediatric patients. When the device is used to monitor lung conditions such as asthma or C.O.P.D., the user should be under the care of a licensed health care professional.* A licensed health care

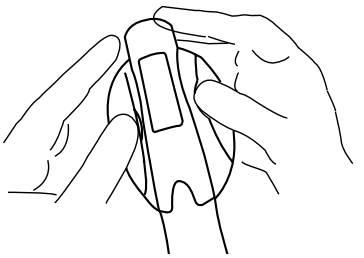
professional's advice is required to understand the meaning and importance of measurements reported by the device, and how to decide on an appropriate treatment plan. This treatment plan will tell the patient what action to take when there are changes in their peak flow measurements.

*They will instruct you on when to measure and will explain how your peak flow measurement helps them monitor your lung function, and how well treatments are working.

2. BIOS Peak Flow Meter

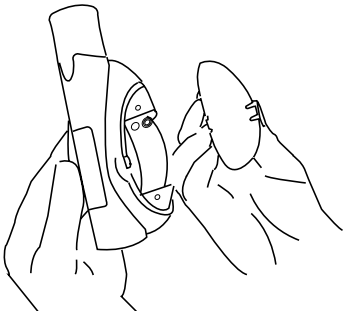


3. Getting Started



Before your first use, we recommend that you disinfect the mouthpiece as explained on pages 12-14.

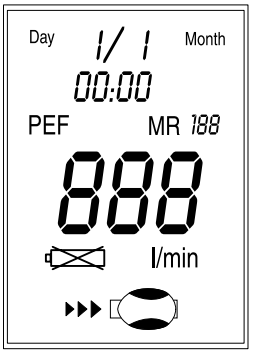
3.1 Inserting the Batteries



1. Open the Battery Compartment from underneath and insert the two batteries (1.5V, size AAA).

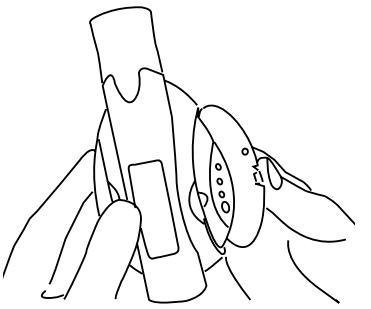
2. Ensure polarity is correct, as indicated by the symbols in the compartment.

3.2 Setting Date and Time

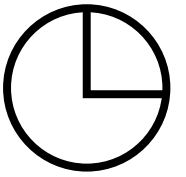


The monitor automatically records the time and date of each measurement. After new batteries have been inserted, the time/date display shows the following setting: year: 2002, day 01, month 01 and time 00:00 o'clock.

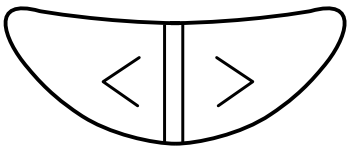
You must then re-enter the date and current time. To do this, proceed as follows (Example: Entering 15th June 2002, 09:50 o'clock):



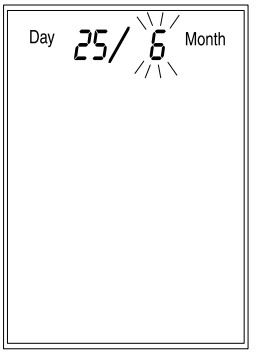
1. Open the Data Compartment from underneath at the position of the data symbol indication.
2. Press the small time switch next to the clock symbol with a pen and «2002» starts blinking; release the switch.



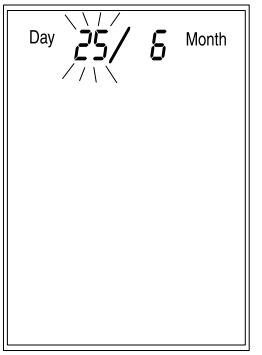
3. Using the two arrow keys on the front of the monitor you can decrease (left arrow button) or increase (right arrow button) the number. Release the arrow button when the correct number is reached.



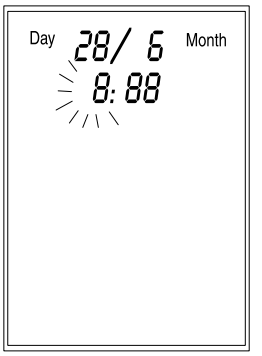
4. Press the time switch again to confirm the year setting and move to the month setting. The month digits blink.



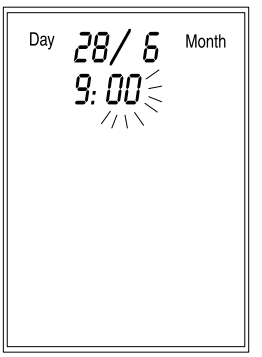
5. The current month can now be entered by pressing the arrow button. (Example: pressing the right arrow button 5 times advances to 06 for June).



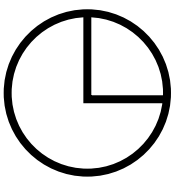
6. Press the time switch again to confirm the month setting and move to the day setting. The day digits blink.
7. The current day can now be entered by pressing the arrow button. (Example: pressing the right arrow button 14 times advances to 15 for 15th June).



8. Press the time switch again to confirm the day setting and move to the hour setting. The hour digits blink.
9. The current hour can now be entered by the arrow button. (Example: pressing the right arrow button 9 times moves to 09 for 09 o'clock).



10. Press the time switch again to confirm the hour setting and move to the minute setting. The minute digits will now blink.
11. The current minutes can now be entered by pressing the arrow button. (Example: pressing on the left arrow button 9 times moves to 50 for 09:50 o'clock).
12. Press the time switch again to confirm all settings. Date and time are now stored, the clock starts running and the monitor switches



to «ready» state condition which enables your first measurement.

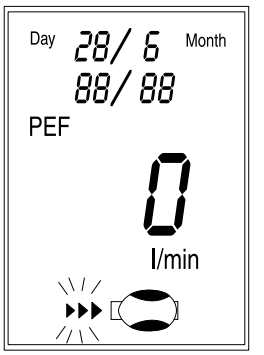
13. Close the data compartment.

Note:

- If you hold down the arrow key for more than 2 seconds, it speeds up.
- Date/time can also be set easily from a computer when you run the Asthma Analyser Software. Refer to page 16 for software download information.

4. Carrying out a Measurement

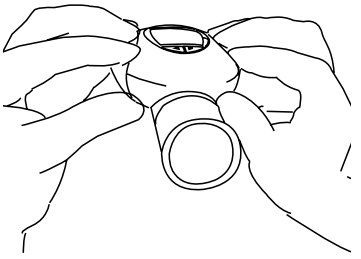
- **When different people use this meter their individual readings cannot be assigned to different users when the data is stored.**
- **If time/date is not set, measurements can not be performed.**
- If another person intends to use the device permanently, all data from the previous user should be erased as explained on pages 14-15.
- In case another user has already used the monitor, we recommend disinfecting the measuring tube as explained on pages 12-14. In this case we also recommend that each user uses a new mouthpiece.



1. Press the ON/OFF button to turn the monitor on. At first, the last result of the memory is shown («0» if there is not

yet any data) and then the device indicates «READY» for a measurement by two short beeps and blinking arrows.

2. You can perform the measurement while standing or sitting upright. For better comparison of your data you should always perform the measurement in a similar position.

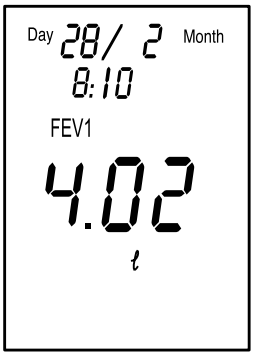


3. Hold the monitor with both hands on the two rubber areas (compartments).
4. Inhale completely and hold your breath for a moment.

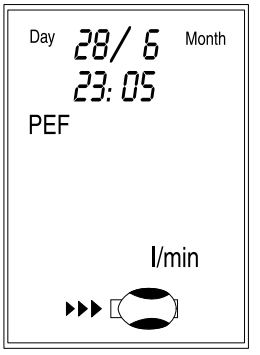


5. Cover the mouthpiece tightly with your lips.
6. Blow into the measuring tube as hard and as fast as you can.
7. A long beep confirms that the result is recorded. The peak flow value is displayed for about 3 seconds, then the FEV1 is shown. Afterwards, the monitor is ready for a new measurement which is indicated by two short beeps.





8. It is recommended to perform three or more measurements sequentially. Please note that the monitor only saves the highest reading from switching the device on until switching it off.



9. After each measurement, the actual reading is shown in the display, and then switches automatically to the highest reading of your current measurement session.



10. Press the ON/OFF button to switch the monitor off. Before the monitor switches off, the highest value and its related memory position «MR xx» is displayed.
11. Store the monitor in a clean and dust free place.

Traffic light indicator on the device

After the measurement, a small arrow in the display will indicate if the reading is in the green, yellow, or red range.
500 l/min is defined as reference value.

If a reading is above 80% (> 400 l/min) of the reference value, it will be indicated in the green range. A reading in the yellow range indicates a reading between 60% and 80% (300 l/min - 400 l/min) of the reference value. A reading in the red range indicates a reading below 60% (< 300 l/min) of the reference value.

It would be best to determine the area limits together with your physician, and when required, these ranges can be set manually within the software.

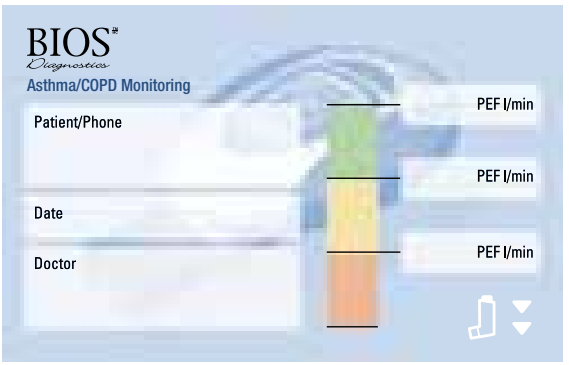
5. Important Information for Measurement and Control of your Peak Flow Values

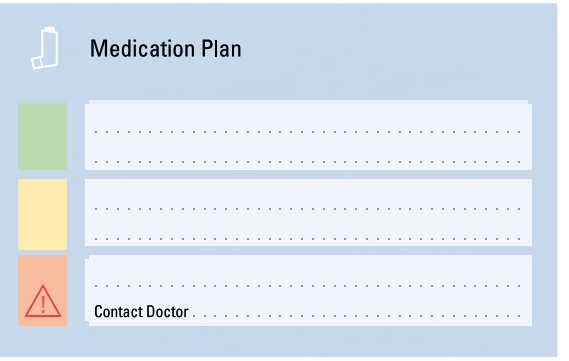
- It is necessary to keep regular control of your peak flow values. Doctors generally recommend taking one

measurement in the morning and one in the evening, every day, before inhaling your prescribed medication. Carry out additional measurements whenever you feel unwell or perceive shortness of breath.

- Your doctor is only interested in the highest peak flow value that you can achieve during a measurement session. Please repeat the measurements until you feel you have got the best possible result for the moment. Take care to have sufficient relaxation between measurements. In the case of continually poorer results after each measurement session, talk to your doctor. It may be a sign of instable asthma.
- **Please note that asthma attacks are indicated in advance by low peak flow values before you feel it! Contact your doctor in cases such as these. Also do so if you have signs and symptoms such as chest tightness, shortness of breath, coughing, or wheezing.**
- **Self-measurement means control, not diagnosis or treatment. In any event, please be sure to discuss your measured values with your doctor. Your doctor will also explain which values are normal for you.**
- You should never alter the dosages of any medication without talking to your doctor.
- **Note that the device stores up to 240 measured values with date and time. When the memory is full, the oldest values are automatically erased! Make sure you visit your doctor in time to analyse your data.**

- Always confirm that date and time settings are accurate.
- The performance of the monitor can be affected by extremes of temperature and humidity. Refer to «technical specifications» for details on page 20-21.





6. Self-Assessment with the Traffic Light Scheme

The «traffic light scheme» allows you to self-assess your measured values and the course of your illness. This can lead to independent assessment of your illness symptoms, and possible adjustment of your medication. If you or your physician wish to make use of this scheme, an asthma control card is enclosed with the device, on which a green, a yellow, and a red area are marked. The area limits are best determined together with your physician and entered onto the card.

Significance of the Traffic Light Scheme

Green Area - OK

The lung disease is well under control. A higher medication dosage is not required.

Yellow Area - Caution

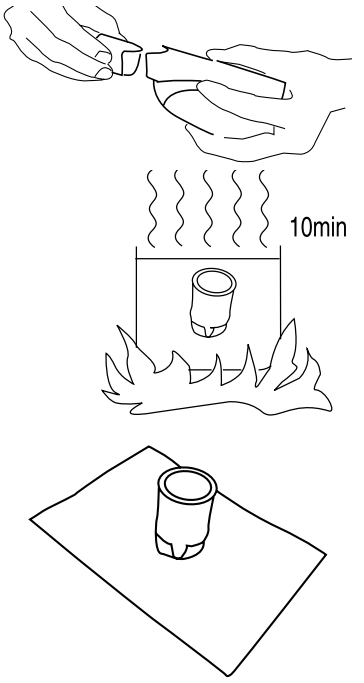
Should your measured values frequently be located in this area, increase your medication dosage as discussed with your physician.

Red Area - Danger
It is dangerous if your measured values are in this area! Act as discussed with your physician or seek emergency medical treatment.

7. Cleaning and Disinfecting

7.1. Cleaning/Disinfecting the Mouthpiece

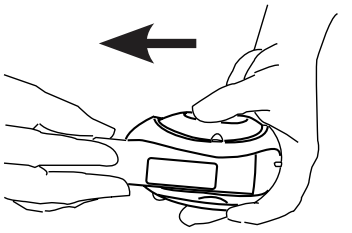
We recommend disinfecting the mouthpiece before your first use and at least once a week using the following procedure:



1. Disconnect the mouthpiece from the measuring tube and put it into continuously boiling water for at least 10 minutes.
2. Afterwards, put the mouthpiece on a fresh paper towel and let it air dry.
3. Reassemble the mouthpiece on the measuring tube.

- Alternatively, you can disinfect the mouthpiece by putting it into commonly available disinfecting solutions. Please carefully follow the instructions for the disinfecting solution. Make sure that it is suitable for a mouthpiece.

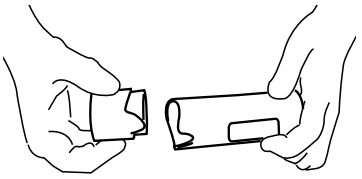
7.2. Cleaning/Disinfecting the Measuring Tube



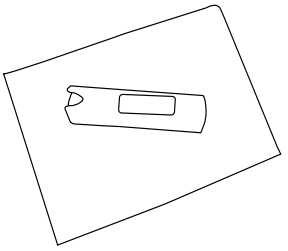
- The performance of the monitor can be affected by spitting or coughing into

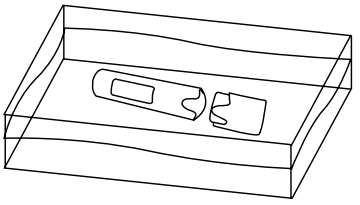
the measuring tube. In this case please rinse the tube with distilled water (available at a pharmacy or drugstore). **DO NOT use tap water.**

1. Disconnect the measuring tube from the main unit by moving it in a forward direction.



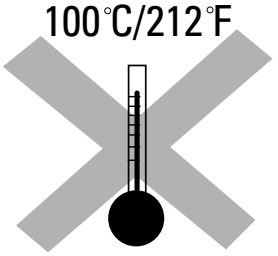
2. Disconnect the mouthpiece from the measuring tube.
3. Rinse the tube in distilled water, afterwards please shake off the water and put it on a fresh paper towel for complete drying.



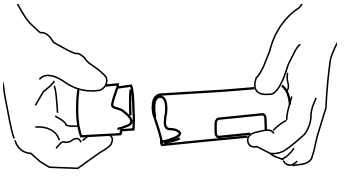


- In case another user has already used the monitor the measuring tube should be disinfected:

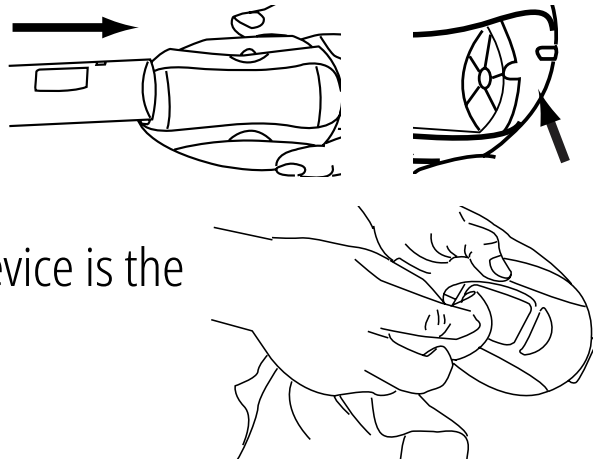
1. Disconnect the tube as explained above and put it into a commonly available disinfecting solution. Please carefully follow the instructions for the disinfecting solution!



2. Never put the measuring tube into boiling water!
3. Reconnect the mouthpiece to the measuring tube and reassemble it back to the main unit as shown. Make sure that the tube «clicks» into the fixed position.



4. Make sure that the measurement tube and the device stay together by confirming that the identification on tube and device is the same.



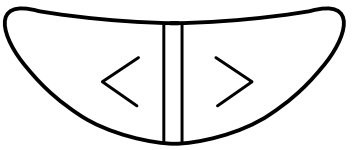
7.3. Cleaning the Main Unit

Clean the main unit once a day with a clean, soft and dry cloth. Never put the main unit into water!

8. Memory Handling

The 240 data entries can be reviewed on the display:

1. Switch the monitor on, and press the memory scroll buttons.
2. By pressing the «<» button, you can see the latest value stored in the memory with date and time. Continue to press this button to show all stored data. If you keep pressing the button you can move quickly through the memory.



3. The «>» button works in the opposite direction.

- **Memory Capacity Low**
  When the device memory holds 230 or more entries, «MR XX» blinks after the monitor it switched on to indicate that the remaining memory capacity is low.



- **Memory Full**

  When the device memory is full (240 entries), the monitor gives a warning «beep» when switching on and «MR 240» blinks. From now on, new data will continue to be stored, but the **oldest values are automatically erased!**



- **Clearing Memory**
  Please note: memory is automatically cleared after data is transfered to computer.



  Clearing all data from the memory should manually be done when you intend to give the monitor to another person. To clear all data press the «<» and the «>» buttons simultaneously for 5 seconds, and then release the buttons. «clr» starts blinking in the display for about 3 seconds. To erase all data from memory you will need to press the ON/OFF button during these seconds. Otherwise the monitor moves back to normal operation and the data remains.

- **Clearing the last measurement**

  You can erase the last memory reading by pressing both memory scroll buttons simultaneously for 5 seconds. After releasing the buttons «clr» will flash on the screen for 3 seconds. To erase the last reading, you need to press both buttons again while the screen is flashing.

9. Analyzing Data using Computer Interface

The monitor can be connected via a USB connection port with a computer. All memory data can be analyzed by the Asthma Analyzer software program.

To download the software, go to **www.biosmedical.com**. Click on the Resource tab, and select Software Downloads. From this page click the download Asthma Analyzer Software and follow the directions prompted on your screen. Make sure the unit is turned ON, for the duration of the install. After completed, restart your computer leaving the unit attached.

10. Messages/Malfunctions/Errors

If an error occurs, one of the following listed error codes is displayed.

Message	Cause	Remedy
Er2	Data communication between the device and printer does not work.	Check the cable connection between the device and printer.
no	There is no data stored in the Monitor.	
Hi	The result is higher than 900 ml/min.	This is a very good result.

10.1. Other Possible Malfunctions

If problems occur when using the device, the following points should be checked:

Malfunction	Remedy
The display remains empty.	Check the polarity of the batteries (+/-).
Batteries have been installed.	If the display is erratic or unusual, remove the batteries and re-install new batteries.
The instrument frequently fails to measure or the values measured are wrong.	1. Ensure that the measuring tube is connected correctly. 2. Check if when blowing into the tube, the wing wheel is rotating. Any objects, dust, liquids, or mucus may interfere with the rotation of the wing wheel. In this case clean the tube as explained. 3. Discuss the values with your doctor.

11. Battery Replacement

When the low battery symbol appears in the display, the device is blocked until the batteries have been replaced. Use 1.5 V «Long-Life» or «Alkaline» batteries, size «AAA». The use of 1.2 V Accumulator batteries is NOT recommended.

If the monitor is left unused for longer periods, remove the batteries. **Please note** that during battery exchange the data stored in the memory of the monitor is well protected and will NOT be lost.

After battery change (or when the unit has been disconnected from any power supply), time/date needs to be entered again. Otherwise data can not be memorised.

12. Care and Safety Information

- Do not expose the device to extreme temperatures, humidity, dust or direct sunlight.
- Clean the device with a soft, dry cloth. Do not use thinners or similar solvents. The measuring tube should not be washed in a dishwasher!
- Do not drop the instrument or treat it roughly in any way. Avoid strong vibrations.
- Never attempt to repair the instrument yourself. Any unauthorised opening of the instrument invalidates all guarantee claims!
- Do not use this device if you think it is damaged or notice anything unusual.

- The function of this device may be compromised when used close to strong electromagnetic fields such as mobile phones or radio installations. We recommend a distance of at least 1 m. In cases where you suspect this to be unavoidable, please verify if the device is working properly before use.

13. 2 Year Limited Warranty

The BIOS Diagnostics™ Peak Flow Meter has a 2 year limited warranty to be free of manufacturing defects for the original owner. This warranty does not include as below:

- Accessories and wearing parts: Batteries, mouthpiece, measuring tube.

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 tested or replaced to your full satisfaction.

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

Should correction 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 owner's option) to:

Thermor Ltd.
Returns Department
16975 Leslie Street
Newmarket, ON L3Y 9A1
www.biosmedical.com
Email: support@biosmedical.com

Please include your name, return address, phone number, and email address. Thermor will test 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 return shipping.

14. Technical Specification

Measuring range:	PEF from 50 - 900 l/min FEV_1 from 0.01 - 9.99 litres
Measuring method:	Rotating wing wheel
Accuracy:	PEF ± 20 l/min or 10% of the reading, whichever is greater. FEV_1 ± 0.1 l or ± 5% of the reading, whichever is greater.
Measuring resolution:	PEF 1 l/min; FEV_1 0.01 l
Data safety:	Data rememorised by EEPROM
Memory:	240 measurements with date/time

Size:	77 (W) x 144 (L) x 48 (H) mm
Weight:	150g (with batteries)
Storage conditions:	-5 - +50 °C / 23 - 122 °F, 10 - 90% relative maximum humidity
Operation conditions:	10 - 40 °C / 50 - 104 °F, 10 - 85% relative maximum humidity
Power source:	2 batteries of 1.5 V, size AAA
Battery lifetime:	Approximately 1000 measurements
IP Class:	IP22
Reference to standards:	CE (EU Guidelines 93/42/EEC) EN60601-1, EN60601-1-2, EN ISO 23747, IEC60601-1-11
System requirements:	Please see website for system requirement details. Internet access for online download, and one free USB port required.
Expected service life:	5 years or 10000 measurements

Technical modifications reserved!



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.

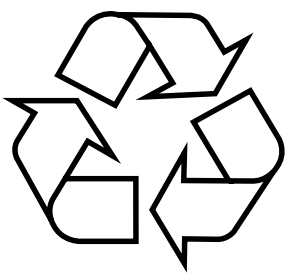


Batteries and electronic devices must be disposed of in accordance with the locally applicable regulations, not with domestic waste.



IP22: Protected against solid foreign particles with a diameter of 12.5 mm or greater. Protected against vertically falling water drops when the device is tilted up to 15°. Keep Dry.

Paper



Papier

BIOS | Medical

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