

# GLM-77 Blood Glucose Meter

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## User Manual

### INTRODUCTION

Thank you for choosing the GLM-77 blood glucose meter. The meter associated with the GLS-77 blood glucose test strip is designed to quantitatively measure the concentration of glucose in capillary whole blood by persons with diabetes or by healthcare professionals for monitoring glucose in the home or in healthcare facilities.

Please read this manual carefully before using your GLM-77 blood glucose meter. If you have any questions or requirements, please contact us or your local distributor.

## TABLE OF CONTENTS

1.ABOUT THE METER .....	3
2.GLM-77 BLOOD GLUCOSE METER AND LCD WINDOW.....	5
3.GLS-77 BLOOD GLUCOSE TEST STRIP.....	6
4.SETTING METER PARAMETERS.....	7
5.PREPARING FOR BLOOD SAMPLING.....	7
6.CHECKING THE CODE.....	8
7.PERFORMING A TEST WITH GLS-77 BLOOD GLUCOSE TEST STRIP.....	9
8.UNDERSTANDING YOUR TEST RESULT.....	11
9.MEMORY RECALL.....	12
10.CONTROL SOLUTION (OPTIONAL).....	13
11.METER SPECIFICATIONS.....	14
12.TAKING CARE OF YOUR METER.....	15
13.DISPOSING YOUR METER.....	19
14.DISPLAYING MESSAGES AND TROUBLESHOOTING.....	20

## ABOUT GLM-77 METER

### Intended Use

The GLM-77 blood glucose meter is designed to quantitatively measure the concentration of glucose in capillary whole blood by people with diabetes or by healthcare professionals for monitoring blood glucose at home or in healthcare facilities.

The device is an over-the-counter device indicated for professional use and for home use.

The meter is for quantitative blood glucose testing with GLS-77 blood glucose test strips.

### About the Meter

The GLM-77 blood glucose meter uses the biosensor technology in blood glucose monitoring to provide you with easy and comfortable testing. It requires only 0.8µL blood sample to complete the testing in just 8 seconds.

## Important Information

**IVD** The GLM-77 blood glucose meter is intended for in vitro diagnostic use with capillary whole blood. The meter should not be used for diagnosis of diabetes or for testing newborn infant (neonatal testing).

### Caution

1. The user should not take any decision of medical relevance without first consulting with his or her medical professionals.
2. Call your doctor immediately if you experience symptoms that are not consistent with your blood glucose test results.
3. Severe dehydration or excessive water loss may cause false results. Call your doctor right away if you believe you are suffering from dehydration.
4. A red blood cell count (hematocrit) that is either very high (over 65%) or very low (under 25%) may cause false result.
5. High altitudes may affect the test results.
6. Operating temperatures outside the range of 10°C to 40°C (50°F to 104°F) may affect the test results.

7. Interferences: Acetaminophen, Dopamine, L-DOPA, Ibuprofen, Salicylate, Bilirubin, Creatinine, Cholesterol, Triglycerides, Uric acid, EDTA, Galactose, Gentic acid, Glutathione, Haemoglobin, Heparin, Maltose, Methyl-DOPA, Tolbutamide, Tolazamide, Xylose, Pralidoxime Iodide and Icodextrin (when occurring in normal or therapeutic concentrations) do not significantly affect results. However, abnormal high concentrations of substances, such as Acetaminophen, Salicylate, Uric acid, and other reducing substances in blood, may cause inaccurate high results.
8. Intravenous administration of ascorbic acid which results in blood concentration of ascorbic acid  $>3$  mg/dL will cause overestimation of blood glucose results.

### **The Package of the GLM-77 Blood Glucose Meter contains:**

1. GLM-77 Blood Glucose Meter
2. Lancing Device with CE Marking
3. 3V Lithium Battery
4. User Manual
5. Carrying Case

**NOTE: PLEASE MAKE SURE THAT ALL PRODUCTS LISTED ON THE "CONTENTS" OF THE BOX ARE CONTAINED IN THE PACKAGE BEFORE USING THIS METER. IF YOU FIND ANY IMPERFECTION IN OUR PRODUCTS, PLEASE RETURN THE ENTIRE PACKAGE TO THE PLACE OF PURCHASE.**

## GLM-77 BLOOD GLUCOSE METER AND LCD WINDOW

Study the meter by reading the diagram.



- DISPLAY:** The large, easy to read display shows blood glucose results, messages, glucose results stored in memory, time and date.
- "M" BUTTON:** Press to enter memory mode to recall the information stored in meter's memory and to increase values in the settings mode.
- "S" BUTTON:** Press to enter time setting, to decrease values in the setting mode.
- STRIP SLOT:** Holds a Test Strip or Check Strip in place when you perform blood glucose test or perform check tests.
- BATTERY COMPARTMENT:** Holds one 3V lithium battery. The battery is not installed into meter when newly purchased. Please install the battery first before use.
- METER LABEL:** Label of the Meter.
- EJECTION BUTTON:** For an easy ejection of the test strip.

### 1. TEST RESULT

2. **DATE:** Month/Date.

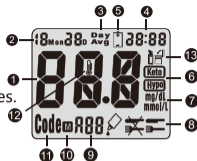
3. **DAY AVG:** Appears when the meter is in the memory mode while recalling 7/14/21/28 day test averages.

4. **TIME:** 24 hour period format.

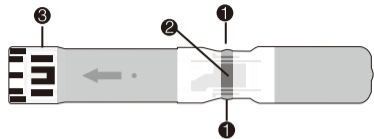
### 5. BATTERY SYMBOL:

Appears when battery is low.

- (Keto) (Hypo) SYMBOL:** "Keto" symbol appears when the blood glucose concentration is above 17.8 mmol/L (320 mg/dL). This simply suggests that a ketone test is recommended. Consult your healthcare professional about testing for ketones; "Hypo" symbol appears when the blood glucose concentration is below 3.9 mmol/L (70 mg/dL).
- mg/dL / mmol/L:** Results are displayed as mg/dL or mmol/L
- ⚡ SYMBOL:** The test can be adjusted and stored into 3 types of test modes - BEFORE MEAL TEST (AC ⚡), AFTER MEAL TEST (PC ⚡), and CONTROL SOLUTION TEST (QC ⚡).
- 888** This display shows to ensure that all digits are working properly.
- M: M** appears when reading previous results.
- CODE:** Code appears to indicate code number when it's ready to test.
- THERMOMETER SYMBOL:** Appears when ambient temperature is outside the acceptable range needed for testing.
- STRIP SYMBOL:** Appears when the test strip is inserted and meter is ready for blood testing. Recap the vial immediately after removing test strips.

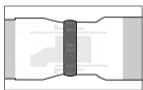


## GLS-77 BLOOD GLUCOSE TEST STRIP

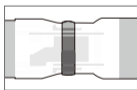


1. Sampling Port: apply the blood to either side of strip.
2. Detection Zone: make sure the part is filled up with blood to ensure the correct results.

For example:



(✓)



(✗)

3. Electrode End: insert the end of test strip into meter.

## IMPORTANT INFORMATION

1. Do not use damaged test strips or test strips changed in any way. Use test strip immediately after removing it from the vial. Recap the vial immediately and close it tightly.
2. GLS-77 Blood Glucose Test Strips are intended for in vitro diagnostic use with capillary whole blood or control solution. Results will not be accurate if used with plasma or serum samples.
3. GLS-77 Blood Glucose Test Strip can be damaged by heat and light. Keep them sealed in the original vial. Keep the vial in a cool, dry place below to 30°C/86°F and above 5°C/41°F.
4. Do not refrigerate.
5. Do not use test strips beyond the expiration date indicated on the vial. The discard date for test strips is three (3) months after first opening the vial. Record the discard date on the vial, when you open a new one.
6. **Ⓜ** For single use only.
7. Do not carry loose test strips in your carrying case.

## SETTING METER PARAMETERS

### Setting Date, Time

When the battery is installed the first time or every time it's replaced, the meter will automatically enter the setting mode. Please set the current time and date before you begin testing.

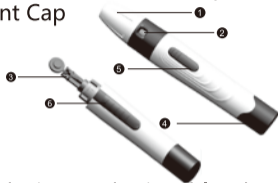
### To set the time and date

1. Press "S" button for 2 seconds to turn on the meter. The meter will enter the setting mode automatically.
2. The year flashes at the sound of beep, for example for the year of 2017, number "17" will flash.
3. Press "S" button to obtain the desired year.
4. Press "M" button to confirm and shifts to the next setting.
5. Repeat to set the month, date, hour and minute.
6. After minute is set, the meter will display "OK" before turning off.

## Prepare for Blood Sampling Adjustable Lancing Device

Used with lancet to obtain a blood sample.

1. Depth adjustment Cap
2. Depth Selector
3. Lancet Holder
4. Cocking Control
5. Release Button
6. Exit Button



### Lancet

Used with lancing device to obtain a blood sample.

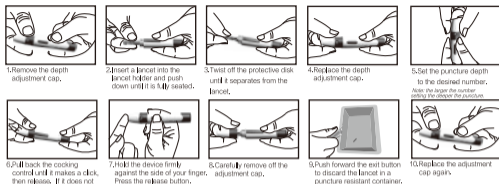
1. Protective cap



### ⚠ Important Information

- ⓧ Lancet is for single use only.
- Keep lancing device and lancets clean.
- Use caution when removing the used lancet from the device and disposing.
- The lancing device and lancets are in conformity with MDD 93/42/EEC. Refer to product labels for contact information of manufacturer and CE marking.

## ADJUSTABLE LANCING DEVICE



## CHECKING THE CODE

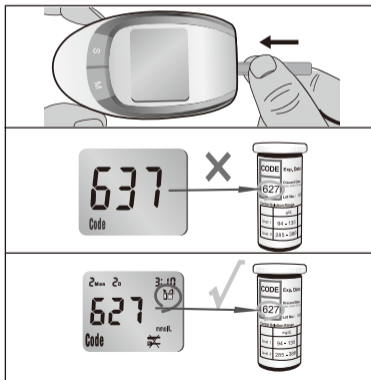
Before you perform your first blood glucose test or every time you open a new box of test strips, you need to verify that the meter “matches” the strips.

1. Insert the test strip into the meter in the direction of the arrows. The meter turns on and beeps. The code number appears briefly.
2. Make sure the code number on the display matches the code number on the test strip container.

If you miss seeing the code number, remove the test strip and reinsert it into the meter.

If the two numbers match you may begin blood testing.

If the two numbers do not match, please contact us or your local distributor.





## PERFORMING A TEST WITH GLS-77 BLOOD GLUCOSE TEST STRIP

1. Wash your hands in warm, soapy water. Rinse and dry completely. Warm your fingers to increase blood flow. Remove new test strip from vial. Be sure to tightly re-cap the vial after removing test strips. Insert the test strip immediately into strip slot as illustrated. The meter turns on automatically.



2. Check that the code number in the meter matches the code on the vial of test strips you are using.



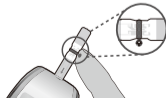
3. When the  symbol flashes, you are ready to perform a test.









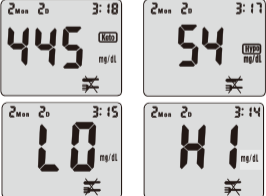


4. Use the lancet loaded in lancing device to obtain a drop of blood on the side of your finger. Hold the device firmly against the side of your finger. Press the release button. Gently massage your finger to obtain the required blood volume. To perform the test, you need only 0.8 $\mu$ L of blood sample.



5. Apply the blood sample to the right or left edge of the test strip in a way that is comfortable for you. Make sure that the blood drop has saturated the test confirmation window. When blood is applied to the strip, a line moves on the display until measurement is completed.



<p>6. Your result will show up in 8 seconds, and it is automatically recorded in the meter's memory. You may also want to record the result in your log book.</p>	
<p>7. If the test is being done within 2 hours after meal, press "S" button to change the setting from AC  to PC  (9.2). If the test is a control solution test, press "S" button again to change the setting from PC  to QC  (9.1).</p> <p><b>NOTE: IF A TEST IS SET AS "QC " , THE RESULT WILL NOT BE CALCULATED INTO AVERAGES.</b></p>	 <p style="text-align: center;">9.1                      9.2</p>
<p>8. After testing complete, remove the test strip from meter. Discard the strip and lancet safely in a puncture resistant container.</p>	
<p>9. The meter has risk indicator function. If <b>Keto</b> is displayed, your blood glucose result may be higher than 320 mg/dL(17.7mmol/L). If is <b>Hypo</b> displayed, your blood glucose result may be lower than 70 mg/dL (3.9mmol/L). The testing range of the meter is from 20 to 600 mg/dL (1.1-33.3mmol/L). If "HI" is displayed, your blood glucose result may be higher than 600 mg/dL(33.3mmol/L). If "LO" is displayed, your blood glucose result may be lower than 20 mg/dL(1.1mmol/L).</p>	

## **UNDERSTANDING YOUR TEST RESULT-NORMAL BLOOD GLUCOSE RANGE**

- The normal blood glucose range is 70 to 100 mg/dL (3.9 to 5.6 mmol/L) for fasting and less than 140 mg/dL (7.8 mmol/L) two hours after meals for a non-diabetic adult. Consult your healthcare professional to find out your target blood glucose value.
- If your blood glucose result seems unusually high or low, or inconsistent with your previous results, check the following:
  1. Does the code number on the test strip vial match the code number on the meter?
  2. Was the blood sample applied to the test strip immediately after removing it from the vial?
  3. Was the size of blood sample sufficient?
  4. Was the test strip vial cap tightly sealed?
  5. Were the test strips expired?
  6. Were the test strips stored away from extreme temperatures in very cold or hot weather or from areas of high humidity?

Then run a quality control check with your control solutions and a new test strip. If the control test result is within the acceptable range, review testing procedure and repeat your blood glucose test with a new test strip.

If your blood glucose value is still inconsistent with your previous results, glucose trend, or how you feel, contact with your doctor immediately for help.

## **REFERENCE**

1. Stedman, Thomas Lathrop. Stedman's Medical Dictionary, 28th Edition, 2006, pg. 2082.
2. D'Orazio et al.: IFCC Recommendation on Reporting Blood Glucose Results; Clinical Chemistry 51:9 1573-1576 (2005)

## MEMORY RECALL

The GLM-77 Blood Glucose Meter can automatically store up to 180 results and automatically calculate your average results of 7-, 14-, 21-, 28- days on both AC and PC.

When recalling the results, each single result appears from the latest to the earliest with corresponding time and date .

### To Recall Results Stored in Memory

1. Turn meter on by press "M" button for 2 seconds until you hear a beep sound. The first result displayed on the screen is your latest test result.  
**M** 12 represents the 12th record of the overall results on this meter.
2. By pressing "M" button, you will see your test record from the most recent to the oldest.
3. Press the "S" button to view the average results. "03" represents within the past 7 days there were 3 AC ~~AC~~ test results. Press the "S" button continuously to view the average results sequentially for 7, 14, 21 and 28 days.
4. Please press "M" button for 2 seconds to EXIT or put it aside for 3 minutes to auto shutdown.



## CONTROL SOLUTION (OPTIONAL)

Control Solution is used to check if GLM-77 Blood Glucose Meter and GLS-77 Blood Glucose Test Strips are working together properly as a system. Control Solution can be used in two ways:

1. To practice the test procedure.
2. To make sure that the GLM-77 Blood Glucose Meter and GLS-77 Blood Glucose Test Strips are working together properly.



## ⚠️ IMPORTANT INFORMATION

1. Do not use control solution beyond the expiration date indicated on the bottle label.
2. The discard date for control solution is 90 days after first opening. Record the discard date on the bottle, when you open a new bottle of control solution.
3. Store the control solution closed at temperature range of 5°C-30°C (41°F-86°F).

## PERFORM A CONTROL TEST

1. Insert a new test strip into the strip slot, the meter will activate. The code number will appear on the screen. Compare the code number shown on the screen against the code number on the test strip vial. If the two numbers match, you may begin test.



2. Gently shake the control solution, discard the first drop and apply the control solution to the right or left edge of strip. Make sure that the control solution has saturated the test confirmation window.



3. Test result will show up in 8 seconds. The result should correspond to the range printed on the label of strip vial used.



NOTE: REPEAT TEST IF THE RESULT FALLS OUTSIDE THE CONTROL RANGE ON THE CONTROL SOLUTION BOTTLE LABEL. IF YOU CONTINUE TO GET THE RESULT FALLING OUTSIDE THE CONTROL RANGE, YOUR METER AND STRIP MAY NOT BE WORKING PROPERLY. DO NOT USE THE SYSTEM TO TEST YOUR BLOOD UNTIL YOU GET A TEST RESULT FALLS WITHIN THE CONTROL RANGE. CONSULT YOUR LOCAL DISTRIBUTOR FOR HELP.

## METER SPECIFICATIONS

1	Assay Method	Electrochemical biosensor
2	Sample Size	0.8 $\mu$ L
3	Operating Temp. Range	10°C - 40°C (50°F~104°F)
4	Operating Relative Humidity	20% - 80% RH
5	Acceptable Hematocrit Range	25~65%
6	Measuring Range	20 - 600 mg/dL or 1.1 - 33.3 mmol/L
7	Measuring Time	8 seconds
8	Memory Capacity	180 test results with time and date
9	Power Supply	One 3V Lithium Battery(CR2032)
10	Battery Life	Approximately 1000 tests
11	Test Result	Plasma glucose
12	Test Sample	Capillary whole blood from adults only
13	Automatic shut-off	In 3 minutes
14	Meter storage conditions	Temperature: -25°C to 70°C Humidity: 20% - 80% RH
15	Altitude	8800 feet (2750 meter)

## **Electromagnetic Compatibility**

It is the manufacturer's responsibility to provide equipment electromagnetic compatibility information to the customer or user.

It is the user's responsibility to ensure that a compatible electromagnetic environment for the equipment can be maintained in order that the device will perform as intended.

This product complies with the emission and immunity requirements of EN/IEC 61326-2-6 and EN/IEC 61326-1.

This equipment has been designed and tested to CISPR 11 Class A. In a domestic environment it may cause radio interference, in which case, you may need to take measures to mitigate the interference.

Before using the equipment, the electromagnetic environment should be evaluated prior to operation of it.

Do not use this equipment in close proximity to sources of strong electromagnetic radiation

(e.g. unshielded intentional RF sources), as these can interfere with the proper operation

## **TAKING CARE OF YOUR METER**

When the meter is dirty, please clean it by wiping gently with a cotton swab or cloth. Avoid use powder to clean meter.

This instrument should not be subjected to extremes in temperatures, humidity, direct sunlight, shock or dust.

## REPLACING THE BATTERY

The GLM-77 blood glucose meter's battery life will vary depending on usage, so always keep a spare available.

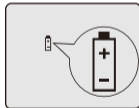
The battery can last about 18 months when testing 2 times a day, total 1000 tests.

When the battery symbol appears on the meter display, it means battery is getting low. (FIG. A)

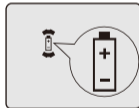
You will still be able to test with low battery, but you should replace it as soon as possible. When battery symbol appears flashing on the display, the meter will no longer give results and you must replace the battery immediately. (FIG. B)

## NOTE:

- **EVERY TIME WHEN YOU REPLACE THE BATTERY, THE METER WILL TURN ON AUTOMATICALLY ENTERING THE TIME/ DATE SETTING.**
- **PLEASE SET THE CURRENT TIME AND DATE BEFORE TESTING.**
- **PLEASE REMOVE THE BATTERY IF YOU WILL NOT USE THE METER OVER A LONG PERIOD OF TIME.**



(FIG. A)



(FIG. B)



## TO REPLACE THE BATTERY

1. Make sure the meter is turned off. Let the front of the meter rest in the palm of your hand. Slide battery compartment door open.



2. Remove the old battery and insert the new 3V Lithium battery into the battery compartment, with the "+" side facing up.



3. Slide battery compartment door closed. Check to see if your meter is working. If it fails to turn on, the battery may have been inserted incorrectly. Remove the battery and reinsert it as illustrated.



## **CLEANING METER**

Caring for your GLM-77 Blood Glucose Meter is easy - just keep it free of dust. If you need to clean it, please follow the guidelines below carefully to help you get the best performance :

### **Do:**

- Make sure the meter is turned off
- Gently wipe the meter surface with a soft cloth slightly dampened with 75% medical alcohol.
- Make sure that you squeeze off excess liquid from the cloth before you wipe the meter's surface.

### **Do Not:**

- Get any moisture in the code chip slot or test strip slot
- Spray any cleaning solution directly onto the meter
- Put the meter under water or liquid
- Pour liquid into the meter

## **STORAGE AND HANDLING**

Keep your meter free of dust. Protect it from extreme temperature and humidity.








## **DISPOSING YOUR METER**

During blood glucose measurement the meter itself may come into contact with blood. Used meters may carry a risk of infection. Please dispose your used meter properly after removing the battery according to the regulations applicable in your country. For information about correct disposal please contact your local council and authority.

The meter falls outside the scope of European Directive 2012/19/EU (Directive on waste electrical and electronic equipment (WEEE)).

## DISPLAYING MESSAGES AND TROUBLESHOOTING













As listed below are problems that may appear with your GLM-77 Blood Glucose Meter, when performing a test. These messages may help you to identify certain problems. If you have any concerns or see any other error display, please contact us or the local distributor for help.

DISPLAY	DESCRIPTION	ACTION TO TAKE
	Display check	If some parts of the display do not work Contact your local distributor for help
	Blood glucose result may be higher than 33,3 mmol/L or 600 mg/dL.	If this is not confirmed by the way you feel, review proper testing procedure and perform a quality check with control solution. Repeat blood test, if "HI" still appears, call your doctor's immediately.
	Blood glucose result may be lower than 1,1 /L or 20 mg/dL.	If this is not confirmed by the way you feel, review proper testing procedure and perform a quality check with control solution. Repeat blood test. If "LO" still appears, call your doctor's immediately
	Temperature is above or below the operating range of test strips	The result you have obtained may not be accurate. Move to an area with temperature between 10°C to 40°C (50°F - 104°F). Do not artificially heat or cool the meter
	Battery is dead.	Change battery now
	Test strip may be damaged or test was not performed correctly	Perform the test with new test strip and follow the test procedure correctly
	Test strip is used	Perform the test with a new test strip only
No responses when strip is inserted into the meter	Maybe: 1. Battery is dead 2. Wrong strip is inserted 3. Meter is defective	You have to: 1. Replace battery 2. Insert the test strip correctly 3. Contact us for help
No responses when blood sample is applied to the strip	Maybe: 1. Blood sample is not sufficient 2. Meter is defective	You have to: 1. Repeat test with sufficient sample 2. Perform Meter Quality Check by inserting check strip.

### NOTE:

If there is any error message displayed no listed here, or your meter shuts down for no reason, you can reset the meter or replace the battery.

## SYMBOLS CONVEY

	For in vitro diagnostic use		B application
	Lot number		Please consult instructions for use
	CE Certification		Caution, consult accompanying document
	Temperature limitation/Store at		Manufacturer
	Authorized representative		Discarded glucose meters and batteries must be discarded in containers labelled with WEEE. Please comply with local regulations and take appropriate protective measures to dispose of all wastes.
	Humidity limitation /store at		The serial number

**CE 0197**

CE Certification



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**Prolinx GmbH**

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Germany



Y+SEE®

# Blood Glucose Meter

MODEL: GLM-77



Bi-directional  
Bluetooth



5 years warranty



less blood sample



8 seconds test

AUTO CODE