

beurer instructions for use

medical

GL32

mg/dL

GB

Codefree

BLOOD SUGAR
MEASURING DEVICE
Step by step

german|engineering



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IVD

CE 0344

Contents: Blood Sugar Measuring Device GL32 mg/dL

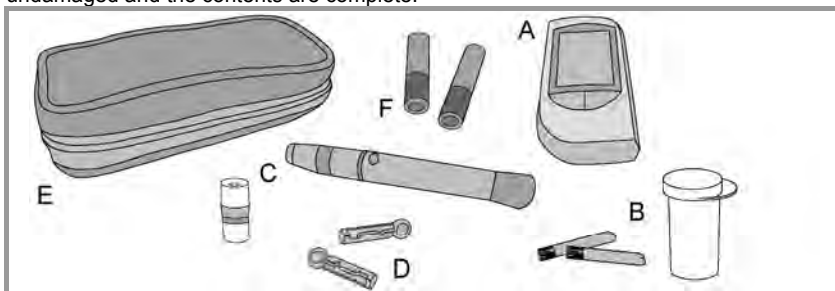
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1 ABOUT YOUR BEURER BLOOD SUGAR MEASURING DEVICE

Read these instructions for use and all accompanying information material carefully and thoroughly before performing your first blood sugar measurement. Store the operating instructions in a safe place where they can be accessed by other users.

1.1 Delivery scope, replacement parts and accessories

Inspect the **Beurer GL32 mg/dL measuring system** to ensure that the packaging is undamaged and the contents are complete:



A 1 GL32 mg/dL blood sugar measuring device

B 10 test strips

C 1 lancing device with AST cap for taking blood samples from alternative sites

D 10 sterile needle lancets

E 1 practical carry case

F 2 x 1.5 V AAA alkaline batteries (contained in the carry case)

These instructions for use, additional information material

If the box has sustained extensive damage or if any contents are missing, please return the system to the retailer.

The blood sugar measuring device, test strips and control solution (available to purchase separately) are all designed to be used together. You should therefore only use the test strips and control solution intended for use with this device.



Note

Only use the manufacturer's original accessories.

Replacement parts and additional accessories

Test strips, control solution and lancets are also available for purchase without a prescription.

Item	REF
50 test strips	REF 464.00
MEDIUM control solution	REF 457.02
100 needle lancets	REF 457.01
Beurer GL32, GL34, BGL60 PC kit (connecting cable, drivers and test software)	REF 462.10

1.2 Functions of the device

This device is intended for measuring the blood sugar content of human blood. It is suitable for self-testing and **does not have to be encoded**. Using this measuring device, you can quickly and easily:

- display and save your measured values (mg/dL).
- display your average blood sugar measurements from the last 7, 14, 21, 28, 60 and 90 days.
- set the time in 24-hour format and set the date (day and month).
- upload your stored measured values to a PC for evaluation (additional accessories required).

The measuring device also features the following control functions:

- Warning if the temperature is unsuitable.
- Battery change reminder when battery power is low.




















Note

- This device is only to be used for regular monitoring and not for the diagnosis of diabetes.
- Discuss your insulin dose with your doctor.




1.3 Signs and symbols

The symbols on the packaging and the nameplate of the measuring device and accessories have the following meaning:

	In-vitro diagnostics
	Serial number
	Temperature range +4°C to +40°C
	Not for reuse/For single use only
	Expiry date
	Maximum shelf life after opening in months
	Lot number
	Sterilised by radiation (lancets)
	Caution, refer to accompanying documents

	Manufacturer
	Refer to instructions for use
	PCT: Certification for products exported to the Russian Federation and CIS countries
	Green Dot: German recycling system
	Contents sufficient for <n> tests
	Order number
	Unit of measure for blood sugar value
	Biohazard, risk of infection

The following symbols are used in the instructions for use:

	WARNING Warning: Risk of injury or danger to health.
	CAUTION Safety notice referring to possible damage to the measuring device/accessories.
	Note Important information to be noted.

2 SAFETY INFORMATION AND WARNINGS

Risk of infection

All components of the measuring device and accessories may come into contact with human blood, and are therefore a possible source of infection.



WARNING

- **This measuring device must display the blood sugar content in mg/dL. The unit of measure mg/dL follows the blood sugar value. If your device does not display mg/dL, contact customer services immediately. You risk damaging your health if you perform a blood sugar measurement using an unfamiliar unit of measure, since values may be interpreted incorrectly and cause the wrong corrective measures to be taken.**
- This measuring device must only be used by one person. There is a risk of infection if the same device is used by more than one person.
- The lancing device is intended for self-testing. Never share the lancing device or needle lancet with another person (risk of infection).
- Use a new sterile needle lancet for each blood sample (for single use only).

Measuring



WARNING

- The measured values you determine are useful for information purposes only – they are not intended to replace consultation with your doctor. Discuss your blood sugar values with your doctor on a regular basis. Do not change any aspects of your treatment unless instructed by your doctor.
- Dehydration or loss of fluids, for example, through sweating, can lead to incorrect results.
- A very high or very low haematocrit value (proportion of red blood cells) can lead to incorrect measurements. With a very high haematocrit value (over 60%), the displayed blood sugar value may be too low. If you have a very low haematocrit value (below 20%), the blood sugar value may be too high. If you do not know your haematocrit value, ask your doctor.
- Do not use the test strips to take blood sugar measurements of newborn infants.
- Metabolites such as uric acid, ascorbic acid, acetaminophen (paracetamol), dopa, methyl dopa, L-dopa, and tolbutamide do not influence the results if they are present within the physiological value range.
- Lipemia effects: Elevated blood triglyceride levels of up to 2000 mg/dL rarely influence the results. Above this level, however, the blood sugar test may be affected.

- Only use fresh capillary whole blood. Do not use serum or plasma.
- Use capillary blood obtained without squeezing the puncture site. When squeezed, the blood is diluted with lymph from the tissues and therefore leads to an incorrect measurement result.
- Do not use the test strips at an altitude above 3275 m.

**Note**

The **Beurer GL32 mg/dL measuring system** is designed for measuring capillary whole blood.

Storage and maintenance**WARNING**

- Store the measuring device and accessories out of the reach of young children. Small parts such as the needle lancets, batteries or test strips may be harmful if swallowed. If parts are swallowed, seek medical advice immediately.
- The test strip container contains a desiccant that may cause skin or eye irritations if inhaled or swallowed. Keep the container out of reach of young children.

Batteries/Saving measured values**WARNING**

- Batteries may be fatal if swallowed. Therefore, always store batteries out of the reach of young children. If a battery is swallowed, seek medical advice immediately.
- Do not throw batteries into a fire: Risk of explosion.

**CAUTION**

- Remove the batteries if they have run out or if the device is not used for a long period of time. This prevents any damage that may be caused by leaking batteries.
- Do not charge the batteries or reactivate them using other means. Do not disassemble or short-circuit the batteries.
- Do not use rechargeable batteries.

**Note**

- The stored blood sugar values remain saved during a battery change. The date and time are retained during battery replacement and if the batteries are run down.
- Each time you change the batteries, use two batteries of the same type, the same brand and the same capacity. Alkaline batteries should be used wherever possible.

Repairs**Note**

- Never open the device. Opening the device invalidates the guarantee.
- Do not perform any repairs on the device yourself, otherwise correct functioning of the device can no longer be guaranteed.
- If repairs are required, please contact customer service.

Disposal**WARNING**

- When disposing of materials from the measuring device, always comply with the generally applicable guidelines for handling blood. Carefully dispose of all blood samples and materials with which you have come into contact, in order to prevent injury and infection of others.
- After use, dispose of the test strips and lancets in a sharp-proof container.

**Note**

- Used and fully discharged batteries should be disposed of in designated collection containers, at a suitable recycling facility, or via an electrical retailer. You are legally required to dispose of batteries properly. The following symbols are found on batteries that contain harmful substances:

- Pb = Battery contains lead
- Cd = Battery contains cadmium
- Hg = Battery contains mercury.

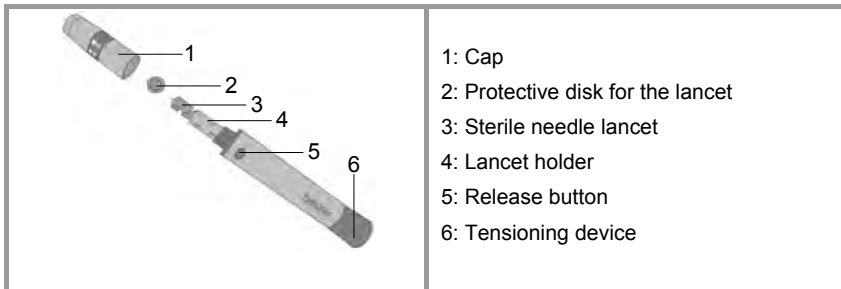


- Please dispose of the device in accordance with EU directive 2002/96/EC – WEEE (Waste Electrical and Electronic Equipment). If you have any questions, contact the local authority responsible for waste disposal.

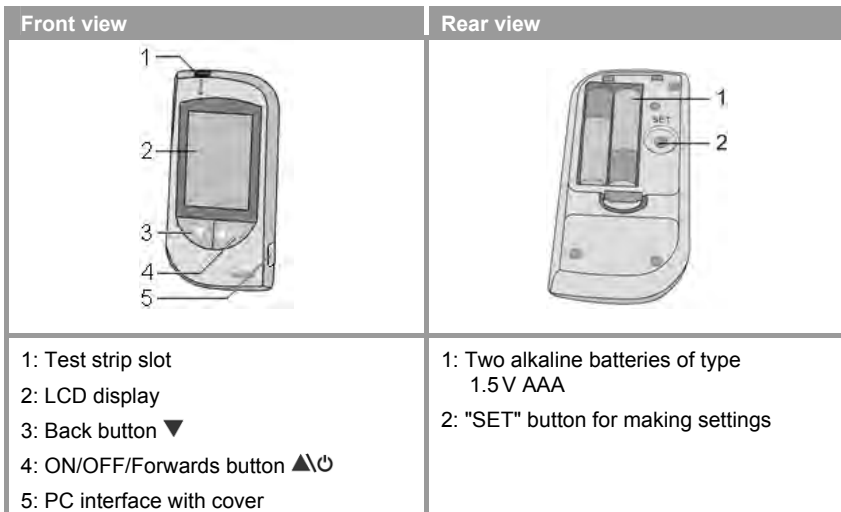


3 DESCRIPTION OF DEVICE AND ACCESSORIES

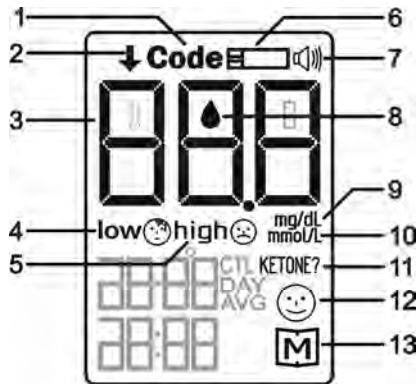
3.1 Lancing device and needle lancets



3.2 Blood sugar measuring device



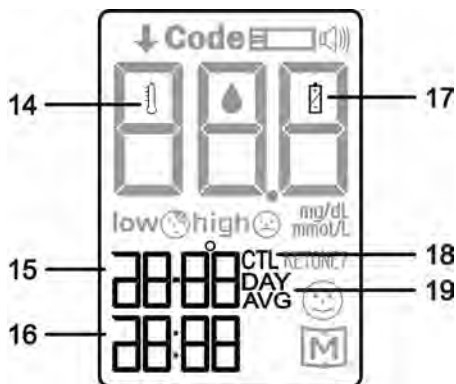
Display symbols for the blood sugar measurement:



- 1: Code symbol (not functional)
- 2: Arrow symbol for test strips
- 3: Value display
- 4: Low blood sugar value (not functional)
- 5: High blood sugar value (not functional)
- 6: Test strip symbol
- 7: Speaker (not functional)

- 8: Blood droplet symbol
- 9: Blood sugar unit mg/dL
- 10: Blood sugar unit mmol/L (not functional)
- 11: Ketone measurement recommended (not functional)
- 12: Memory deleted symbol
- 13: Memory symbol

Other display symbols:



14: Temperature symbol

15: Date: Day-Month

16: Time: Hours-minutes

17: Battery change symbol 

18: CTL for control solution




19: DAY AVG for average value over
7, 14, 21, 28, 60 or 90 days



Note

This blood sugar measuring device is supplied with the blood sugar unit **mg/dL**.

3.3 Test strips

Front view	Rear view
	
<p>1: Slit for blood collection 2: Hold here 3: Contacts</p>	<p>The rear side of the test strip is marked with an 'X'.</p>
<p>Insert the test strip into the device so that the contacts are visible in the slit. Ensure that the front side of the test strip is facing you.</p> 	

Read the following information about handling and storing your test strips carefully. The test strips can only be guaranteed to return accurate results if you follow all instructions carefully.








WARNING

Each test strip must only be used **once** and only for **one** patient.

Handling test strips



Note

- Before using the first test strip, ensure that the seal on the container is unbroken. If the seal is damaged, do not use the test strips.
- Once you have removed the test strip, tightly close the container again immediately.
- Do not use test strips if the expiry date has passed. The use of expired test strips can lead to inaccurate measurements. The expiry date is located on the container next to the egg timer symbol .
- The test strips can be stored for three months once the container is opened. Make a note of when this time will run out (date of opening + 3 months) on the label . The shelf life decreases if the expiry date is reached before the end of the 3 months (see the date next to the egg timer symbol .
- Do not use the test strips if either of these dates has expired ( / .
- Any part of the test strip may be handled with dry, clean hands.
- Use the test strips immediately upon removal from the container.
- Do not bend, cut, or otherwise modify the test strip.
- Do not use test strips that have come into contact with liquids for the blood sugar measurement.

Storing your test strips



Note

- Store test strips in a cool, dry place between +4°C and 40°C. Protect test strips against direct sunlight or heat. Do not store test strips in the fridge.
- Test strips may be stored at a relative humidity between 10 % and 85 %.
- Only store test strips in their original container - never use another container.

4 USING THE DEVICE FOR THE FIRST TIME AND BASIC SETTINGS

4.1 Inserting and replacing the batteries




Note


Two batteries are included in the delivery scope of your blood-sugar measuring device. The batteries are stored inside the case.







1	Remove the lid of the battery compartment on the rear of the device (see "3.2 Blood sugar measuring device", page 8).
2	If you are replacing the batteries, first remove both the old batteries. The device retains the date and time when the batteries are replaced. If the replacement takes a long time, you may have to adjust the date and time afterwards (see "4.2 Basic settings", page 13).
3	Insert two new batteries of type alkaline AAA 1.5 V . It is important to ensure that the batteries are inserted with the correct poles according to the diagram. Do not use rechargeable batteries.
4	Carefully replace the lid on the battery compartment.



When the battery change symbol  appears, the battery is almost empty. Replace both batteries as soon as possible. The screen displays **E-b** if the batteries are so flat that no further measurements are possible.

4.2 Basic settings

1	The measuring device must be switched off. Remove the lid of the battery compartment on the rear of the device (see "3.2 Blood sugar measuring device", page 8).	
2	Press the "SET" button. The year display flashes.	

<p>3</p>	<p>Setting the date and time</p> <p> Note</p> <ul style="list-style-type: none"> • The date and time must always be set. Otherwise, you cannot accurately save measured values with a date and time or call them up later. • The time is displayed in 24-hour format, for example: 20:32. <p>Set the year (the calendar runs until 2049) by pressing the ON/OFF/Forwards button . Press "SET" to confirm the year. The month display flashes. Repeat the above procedure for the month, day, hours, and minutes.</p>	
<p>4</p>	<p>"dEL" is displayed and the memory symbol  flashes.</p> <p>(Caution: All stored measured values will be deleted, if you now press the ON/OFF/Forwards button  twice. For more information, see "6.3 Deleting the measured value memory" on page 26.) To finish making the settings without deleting the measured values, press the "SET" button. "OFF" is displayed briefly and the measuring device switches off automatically.</p> <p>Carefully replace the lid on the battery compartment.</p>	

5 MEASURING YOUR BLOOD SUGAR



WARNING

If you drop the lancing device while a needle lancet is inserted, pick it up carefully and dispose of the lancet.





CAUTION


- Only use the lancing device with needle lancets made by the same manufacturer. The use of other needle lancets may impair the function of the lancing device.
- If the lancing device is manufactured by a third party, consult their instructions for use.



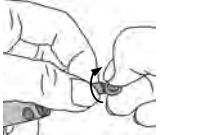



5.1 Obtaining a blood sample

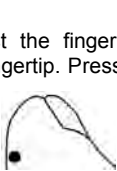
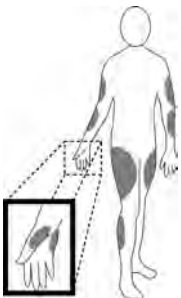
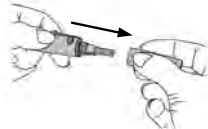

Preparing to take the blood sample

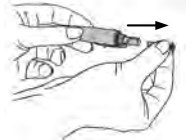
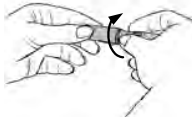
1	<p>Choose a site on the body from where you wish to take the blood sample. You can use the lancing device to take a blood sample from the fingertip or alternative sites such as the palm of the hand, forearm, upper arm, thigh, or calf. We recommend that you take the blood sample from the fingertip. To make the blood sample as pain-free as possible, do not take the blood directly from the centre of the fingertip, but instead from slightly to the side of the centre.</p>
	<p> WARNING</p> <ul style="list-style-type: none">• If you suspect hypoglycaemia: Always take blood from the fingertip. This is because changes in blood sugar levels are more rapidly detected in blood from the fingertip.• Measurement at the fingertip and measurement at other body sites (AST) can lead to considerably different measured values. Always consult your doctor before starting to test at alternative sites.
2	<p>Have the following components ready: Measuring device, container of test strips, lancing device, and a sterile needle lancet. If obtaining a blood sample from a site other than the fingertip, you will also need the AST cap.</p>
3	<p>Before taking the sample, wash your hands using soap and warm water. In addition to optimal hygienic conditions, this is also ensures good circulation of blood through the fingertips. Dry your hands carefully. Also ensure that your lancing site is hygienically clean if taking a blood sample from an alternative site (AST).</p>
	<p> WARNING</p> <p>If you wipe the lancing site with alcohol, ensure that the site has dried completely before beginning the measurement.</p>

Taking the blood sample




	<p>WARNING</p> <ul style="list-style-type: none">• Change the lancing site for every test, e.g. use a different finger or the other hand. Repeated lancing in the same location may lead to infections, loss of sensation, or scarring.• Do not use the AST cap to take a blood sample from the finger.• Never squeeze the finger to obtain a larger droplet of blood. When squeezed, the blood is diluted with lymph from the tissues, which may lead to an incorrect measurement result.• Note that inadequate circulation at the puncture site, for example caused by cold or illness, can lead to inaccurate measurements.
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1	Twist to remove the cap from the lancing device.	
2	Place a sterile needle lancet in the lancing device and push the lancet firmly into place.	
3	Remove the protective disc from the lancet by twisting while holding the shaft of the lancet firmly. Keep the protective disc for safe disposal of the used needle lancet after you have obtained the blood sample.	
4	You will need to use a different cap depending on the site from which you want to take the sample: Fingertip: Cap (grey) Other body sites: AST cap (transparent) Place the selected cap on the lancing device and twist it into place.	
5	Five different puncture depths can be selected on the lancing device: <ul style="list-style-type: none"> • 1 to 2: Delicate or thin skin • 3: Normal skin • 4 to 5: Thick or rough skin Turn the cap in the appropriate direction until the arrow points to the required puncture setting.	
6	Pull back the tensioning device until you hear it click into place. If it does not engage, the lancing device may have unintentionally already been tensioned when inserting the needle lancet and could already be engaged.	

<p>7</p>	<p>The lancing device can now be used to take the blood sample. Ensure that the blood remains in a droplet form and is not smeared.</p> <p>Blood sample from the fingertip Place the lancing device firmly against the finger, slightly to the side of the centre of the fingertip. Press the release button. Lift the lancing device from the finger. A round blood droplet of at least 0.5 microlitres (approx. 1.2 mm, original size: ●) is required.</p> <p>Blood sample from an alternative site (AST) Choose a site that is soft, not next to a bone, with no visible veins and without excessive body hair. Warm the puncture site to ensure good circulation, for example by lightly massaging the area. Place and hold the lancing device against the skin until a round droplet of blood has formed under the cap. Maintain the pressure until the blood droplet has reached a size of at least 0.5 microlitres (approx. 1.2 mm, original size: ●). Lift the lancing device carefully away from the skin.</p>	 
<p>8</p>	<p>If insufficient blood was collected, increase the puncture depth and repeat steps 5 to 7.</p>	
<p>9</p>	<p>Untwist the cap and carefully remove it from the lancing device.</p>	
<p>10</p>	<p>Place the protective disk you kept earlier flat on a hard surface. Pierce the protective disk with the tip of the needle so that the needle is covered.</p>	

11	<p>Carefully remove the needle lancet from the lancing device and discard the lancet in a suitable sharp-proof container.</p> <p>Carefully dispose of all blood samples and materials with which you have come into contact. This prevents injury and prevents infection spreading to other people.</p>	
12	<p>Twist the (grey) cap back in place.</p>	

5.2 Measuring the blood sugar value

1	<p>Hold the measuring device so that the display is facing you.</p>	
2	<p>Insert a test strip, contacts first, into the device. Ensure that the front side is facing you. You can handle any part of the test strip with clean, dry hands.</p>	
3	<p>The device switches on automatically and shows the start display, shortly followed by the checking symbol "⌂". As soon as the flashing blood droplet symbol  is displayed, the device is ready to perform measurements.</p>	
4	<p>Hold the blood collection slit (at the point of the test strip) against the blood droplet. Do not press the puncture site (fingertip or other body part) against the test strip. The blood must not be smeared. The blood is sucked into the slit.</p>	
<div style="border: 1px solid black; padding: 5px;">  <p>WARNING</p> <p>Hold the blood collection slit of the test strip against the blood droplet until the slit is completely filled and you hear a beep. Withdrawing the test strip from the blood droplet before the beep may lead to incorrect measurements.</p> </div>		
5	<p>Once the slit is filled with blood, the device performs the blood sugar measurement. The measuring device counts down for 6 seconds, and the result of the measurement is then shown in the display. Read the measured value. For an explanation of the measured value and possible actions, see the next chapter "5.3 Evaluating the measured value", page 19.</p> <p>If an error message is displayed, refer to chapter "8 Troubleshooting" on page 29.</p>	

6

Remove the test strip from the device and dispose of it carefully in accordance with the applicable guidelines in order to prevent infection of other people.

**Note**

- If the device does not begin the measurement, do **not** subsequently apply more blood. Instead, remove the test strip and end the test procedure. Start again using a new test strip.
- If the test strip is already inserted in the device and you do not apply any blood to the test strip within three minutes, the device switches itself off. In this case, remove the test strip and reinsert it into the slit. The device will switch on again automatically.
- If you experience difficulties applying blood to the test strip correctly, contact customer service.

5.3 Evaluating the measured value

Your blood sugar measuring device can process values between 20 and 600 mg/dL. The warning message "Lo" is displayed for measured values below 20 mg/dL. The warning message "Hi" is displayed for measured values above 600 mg/dL.

**Note**





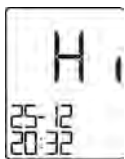
If you suspect that the blood sugar values are incorrect, first repeat the test and, if necessary, perform a function test using the control solution. If you consistently have reason to doubt the results, contact your doctor.

The following table shows a classification of blood sugar values according to the guidelines of the German Diabetes Association (DDG).

Time of blood sugar measurement	Normal blood sugar values	Suspected diabetes	Diabetes
Fasting	Below 100 mg/dL	100 to 110 mg/dL	Above 110 mg/dL
2 hours after eating	Below 140 mg/dL	140 to 200 mg/dL	Above 200 mg/dL

Source: Deutsche Diabetes Gesellschaft (DDG) 2008

Critical blood sugar values

Display	Blood sugar	Action
	Lo = Severe hypoglycaemia (low blood sugar) Below 20 mg/dL	Immediate medical attention required.
	Low Below 70 mg/dL	Eat a suitable snack or small meal. Follow your doctor's advice.
	High Fasting: Above 100 mg/dL 2 hours after eating: Above 140 mg/dL	If this high value is still present 2 hours after the last meal, this may indicate hyperglycaemia (high blood sugar). Discuss with your doctor any possible action to take in this case.
	High, possible ketones Above 240 mg/dL	Ketone test recommended. Consult your doctor.
	Hi = Severe hyperglycaemia (very high blood sugar). Above 600 mg/dL	Repeat the measurement with a new test strip. If the display shows the same result again: Seek medical advice immediately.

5.4 Function test using control solution

The control solution is used for checking the whole blood sugar measuring system. This enables you to determine whether the measuring device and the test strips are functioning correctly together and whether the test is performed correctly. It is very important that you perform these tests using the control solution to ensure accurate measuring results.



CAUTION

Never use control solutions made by other manufacturers. The correct functioning of your Beurer blood sugar measuring device can only be checked using the Beurer MEDIUM control solution.

When is it recommended to perform a test using the control solution?

- After opening a new test strip container.
- If you suspect that the measuring device or the test strips may be defective.
- If your blood sugar measurement values do not correspond to the way you are feeling..
- If you have dropped the measuring device or it has been subjected to other mechanical strain.
- Every time you suspect that the blood sugar results may be incorrect.

It is sufficient to perform a single control solution test if the result is within the recommended range.



WARNING




Do not ingest the control solution. The control solution is only to be used for function tests and is for external use only.





Note



- Store the control solution in a tightly sealed container at room temperature below 30°C. Do not refrigerate.
- Store the control solution out of reach of young children.
- Do not store the control solution in the medicine cabinet. It may be mistaken for medicine to be consumed.

Preparations

- Do not use the control solution once the expiry date has passed. Using control solution that is out-of-date may lead to incorrect function test results. The expiry date is located on the bottle next to the egg timer symbol .
- The control solution can be kept for three months once the bottle is open. Make a note of when this time will run out (date of opening + 3 months) on the label . The shelf life decreases if the expiry date is reached before the end of the 3 months (see the date next to the egg timer symbol .

- Do not use the control solution if either of these dates has expired ( / ).
- Allow the measuring device, test strips and control solution to reach room temperature (+20°C to +25°C).

Performing a function test using the control solution

1	Hold the measuring device so that the display is facing you.
2	Insert a test strip into the slit on the measuring device, contacts first. Ensure that the front side of the test strip is facing towards you (see "3.3 Test strip", page 11).
3	The device switches on automatically and shows the start display, shortly followed by the checking symbol "CH". As soon as the flashing blood droplet symbol  is displayed, the device is ready to perform measurements.
4	Press the ON/OFF/Forwards button  to switch to control mode. In control mode, the measured value is not stored and hence does not distort your measurement statistics.
5	"CTL" appears in the display.
6	Shake the control solution well before use. Unscrew the cap and squeeze out a drop of solution. Wipe away the first drop and squeeze out an additional drop.
7	To prevent the remaining control solution in the bottle from becoming contaminated through the tip of the bottle in contact with the test strip, do not apply the drop directly to the test strip. Instead, apply the drop to a clean surface, and then apply the drop from there to the blood collection slit on the test strip. The solution is sucked into the slit. Wipe the tip of the bottle using a clean, dry paper tissue.
8	Once the slit is filled with solution, the device begins the measurement. The device counts down for 6 seconds, and the result of the measurement is then shown in the display.
9	Check whether the result is within the specified results range for the control solution. This results range is printed on the test strip container.

Expected results

At room temperature, the measurement results for 95% of all control solution tests should lie within the results range printed on the test strip container.



WARNING

The results range printed on the test strip container applies only for the control solution. **This is not a recommended value for your blood sugar level.**

If measurement results are outside the specified range, check the following possible causes:

Cause	Remedy
<ul style="list-style-type: none">• The drop of control solution was not discarded.• The tip of the bottle was not wiped clean.• The bottle was not shaken vigorously enough.	Eliminate the cause and repeat the test.
Control solution has expired or is contaminated.	Repeat the test using a new bottle of control solution.
The control solution, test strip, or measuring device is too warm or too cold.	Allow the measuring device, test strips and control solution to reach room temperature (+20°C to +25°C) and repeat the test.
Test strip is damaged.	Repeat the test using a new test strip.
Test strip is out of date.	Open a new container of test strips. Repeat the test.
There is a problem with the measuring device.	Contact customer service.



WARNING

If you persistently obtain results outside of the specified range when testing with the control solution, **do not continue using the system to determine your blood sugar content.** Contact customer service.

6 THE MEASURED VALUE MEMORY

Your blood sugar value is stored automatically each time you take a measurement. Exception: if "CTL" is activated during a measurement with control solution, the value is not stored. The measured value memory can store up to a maximum of 448 values. Once this number is reached, the measured value always replaces the oldest value in the memory. You can display the average value for the last 7, 14, 21, 28, 60 and 90 days, as well as displaying each value individually.





Note

- If measured values are already stored in the memory and you then reset the date, the average values are calculated according to the new time period.
- "---" indicates that the measured value memory is empty. "OFF" is then displayed briefly and the measuring device switches off automatically.

6.1 Displaying individual values

You can display individual values for the last 448 measurements. The most recent value is displayed first, and the oldest value is displayed last. The measuring device also displays the date and time of the measurement. The number of the measurement is displayed briefly before each measured value.


1	The measuring device must be switched off. Press the ON/OFF/Forwards button ▲⏪.	
2	The start display appears briefly. The device then displays the date and time, and the memory symbol [M] flashes. Press the ON/OFF/Forwards button again ▲⏪.	

<p>3</p>	<p>The number of the measurement flashes briefly (fig. 1) and the most recent value is displayed (fig. 2). Each time you press the ON/OFF/Forwards button ▲⏪, the previous measured value is displayed. You can display a maximum of 448 previous measured values. After the last available individual value, the device displays "End" followed by "OFF".</p> <div data-bbox="176 235 791 414" style="border: 1px solid black; padding: 5px;"> <p>Note</p> <ul style="list-style-type: none"> You can use the back button ▼ to return to measured values that have already been displayed. You can cancel the process at any time. To exit the process, press and hold the ON/OFF/Forwards button ▲⏪ for three seconds. The device displays "End" followed by "OFF". </div>	 <p>Fig. 1</p>  <p>Fig. 2</p>
<p>4</p>	<p>The measuring device switches off automatically.</p>	



6.2 Displaying average values

You can display the average blood sugar value from the last 7, 14, 21, 28, 60 and 90 days. The device also displays how often you measured your blood sugar during the period selected.

<p>1</p>	<p>The measuring device must be switched off. Press and hold the ON/OFF/Forwards button ▲⏪ for three seconds.</p>	
<p>2</p>	<p>The start display appears briefly. The device then displays the date and time, and the memory symbol ☐. Once the symbols "DAY" and "AVG" are flashing, you can release the ON/OFF/Forwards button ▲⏪.</p>	

3	<p>The average value for 7 days is displayed, together with the number of measured values recorded within this period (in the diagram: 14 measured values within the last 7 days).</p> <p>Press the ▲⏻ button repeatedly to display the average value for 14, 21, 28, 60 and 90 days and the corresponding number of measurements. After the last available average value, the device displays "End" followed by "OFF".</p> <div data-bbox="176 284 791 418" style="border: 1px solid black; padding: 5px;"> <p>Note</p> <p>You can cancel the process at any time. To exit the process, press and hold the ON/OFF/Forwards button ▲⏻ for three seconds. The device displays "End" followed by "OFF".</p> </div>	
4	<p>The measuring device switches off automatically.</p>	

6.3 Deleting the measured value memory

1	<p>The measuring device must be switched off. Remove the lid of the battery compartment on the rear of the measuring device.</p>	
2	<p>Press the "SET" button slowly six times.</p>	
3	<p>"dEL" is displayed and the memory symbol ☒ flashes. Press the ON/OFF/Forwards button ▲⏻.</p>	
4	<p>The "dEL" symbol is now also flashing. To delete the measured value memory, press the ON/OFF/Forwards button ▲⏻.</p> <div data-bbox="176 837 791 922" style="border: 1px solid black; padding: 5px;"> <p>Note</p> <p>To switch off the device without deleting the measured values, press the "SET" button.</p> </div>	
5	<p>"---" is displayed briefly, followed by the ☺ symbol.</p>	
6	<p>Press the ON/OFF/Forwards button ▲⏻. "OFF" is displayed briefly and the measuring device switches off. Carefully replace the lid on the battery compartment.</p>	

6.4 Transferring measured values to a PC

The **Beurer GL32 mg/dL measuring system** features a PC interface that you can use to upload your stored blood sugar measurement values to a PC. Using special software, you can evaluate your measured values on the PC and use the evaluations for monitoring your blood sugar levels.

The connection cable is available from your retailer as the accessory set "Beurer GL32, GL34, BGL60 PC kit" (see "1.1 Delivery scope, replacement parts and accessories", page 2).

The connection cable is supplied together with a CD containing the test software for evaluating your measurement results, which enables you and your doctor to better monitor your blood sugar levels. For more information, please refer to the instructions included with the accessory set. These contain all the information you require for the data transfer.



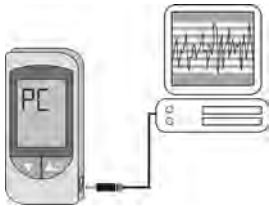
CAUTION

Only use the original data connection cable supplied by Beurer for data transfer. Otherwise, your measuring device or PC may be damaged.

Preparations

- Place the blood sugar measuring device and the Beurer GL32, GL34, BGL60 PC kit next to the PC ready for use.
- Install the evaluation software on your PC as described in the instructions for the Beurer GL32, GL34, BGL60 PC kit.

Transferring your measurement data

1	Remove the rubber cover from the PC interface on the blood sugar measuring device.	
2	The measuring device must be switched off. Insert the flat USB connector of the connection cable into a USB port on your PC. Insert the round jack plug into the PC interface port on your measuring device.	
3	"PC" appears in the display of the measuring device. The measuring device is now ready for data transfer.	
4	Follow the information on data transfer and evaluation in the software and in the operating instructions for the Beurer GL32, GL34, BGL60 PC kit.	

**Note**

- You cannot perform blood sugar measurements while the blood sugar measuring device is connected to a PC.
- Effective evaluation of the measured values is only possible if you have set the date and time correctly (see "4.2 Basic settings", page 13).
- The measured values remain stored on the measuring device after transfer to the PC.

Disconnecting the device from the PC

1	Pull the jack plug from the blood sugar measuring device.
2	The measuring device switches off automatically.

7 STORAGE AND MAINTENANCE

Storing your device

After use, store the measuring device in the supplied case.



Note

- Keep these instructions for use in a safe place.
- If you do not use the device for a prolonged period of time, remove the batteries.

Maintenance

Clean the surface of the device using a damp cloth (water or mild detergent). Dry the device using a lint-free cloth.



Note

The measuring device is made from precision components. The accuracy of the measured values and the service life of the device depend on careful handling:

- Protect the device against impact and do not drop it.
- Protect the device against damaging influences such as moisture, dirt, dust, blood, control solution or water, extremes of temperature and direct sunlight.
- Do not store close to strong magnetic fields, wireless systems or mobile telephones.

8 TROUBLESHOOTING


Problem: Unexpected message on the display

No.	Cause	Action
E-b	Flat batteries	Replace all batteries.
E-F	Test strip was removed from the device during measurement	Repeat the blood sugar measurement using a new test strip
E-t	Temperature of the measuring environment, measuring device or test strip was outside the permissible range	Repeat the test with a new test strip once the measuring environment, measuring device, and test strip have reached room temperature (+20°C to +25°C).
E-U	A used or contaminated test strip was inserted	Insert an unused, clean test strip and repeat the measurement
	Blood was applied to the test strip too early	Repeat the test using a new test strip. Do not apply the blood until the blood droplet symbol ● flashes in the display.

Problem: Device does not turn on.

Cause	Action
Flat batteries	Replace the batteries.
Battery missing or incorrectly inserted	Check whether the batteries are inserted correctly (see "4.1 Inserting and replacing the batteries", page 13).
Test strip was not fully inserted or inserted on the wrong side	Insert the test strip, contacts first, into the slit on the device. Ensure that the front side of the test strip is facing towards you (see "3.3 Test strip", page 11).
Device is defective	Contact customer service.

Problem: The test does not start after you insert the test strip in the device and apply blood.

Cause	Action
Insufficient quantity of blood	Repeat the test with a new test strip and a larger blood droplet.
Test strip is defective	Repeat the test using a new test strip.
Blood was applied while the device was turned off	Repeat the test and apply the blood when  is flashing.
The basic settings of the device have been changed and the change was not completed (see "4.2 Basic settings", page 13).	Remove the lid of the battery compartment and press the "SET" button repeatedly until "OFF" is displayed. Close the battery compartment and repeat the test.
Device is defective	Contact customer service.

**Note**

If the problem persists, contact customer service.

9 TECHNICAL DETAILS GL32 mg/dL

Dimensions	96 x 46 x 20 mm
Weight	69 g (including batteries)
Electrical power	2 x 1.5 V AAA alkaline batteries
Battery life	More than 1000 measurements
Measured value memory	448 measured values with date/time Forwards and backwards scrolling through the memory Data retained during battery replacement
Average values	For 7, 14, 21, 28, 60, 90 days
Automatic switch-off	3 minutes after the last operation
Storage/transport temperature	Temperature: +4°C – +40°C Relative humidity: 10 – 85%
Operating ranges	Temperature: +10°C – +40°C Relative humidity: 10 – 85% (non-condensing)
Glucose measurement range	20 – 600 mg/dL
Coding	No encoding of the device is required ("codefree")
Blood sample	Capillary whole blood
Blood quantity	0.5 microlitres
Measurement duration	Approx. 6 seconds
Calibration	Plasma
Test method	Amperometric biosensor
Application	Suitable for self-testing
System function test	Each time the device is switched on

EMC

This device complies with European standard EN 61326 and is subject to specific preventive measures in terms of electromagnetic compatibility. Note that portable and mobile high-frequency communications equipment may interfere with this device. Further details can be requested by contacting the customer service address provided below.

Note regarding function of test strips

The test strips enable a quantitative measurement of the glucose content of capillary whole blood. When the slit for collecting blood comes into contact with a drop of blood, it fills automatically through simple capillary action. The blood is sucked into the absorbent slit of the test strip and the measuring device measures the sugar level in the blood.

The test is based on the measurement of an electric current caused by a chemical reaction between the glucose and the test strip reagent. The device analyses this current. The strength of the current varies according to the glucose content in the blood sample. The results are shown in the display of the measuring device. Only a small quantity of blood is required (0.5 microlitres) and the measurement takes approx. 6 seconds. The strips can detect blood sugar levels in the range 20 to 600 mg/dL.

Chemical components of the test strip sensor

- Glucose oxidase 10%
- Electron shuttle 50%
- Enzyme protection 8%
- Non-reactive components 32%

Note regarding function of the control solution

The control solution contains a fixed concentration of glucose that reacts with the test strip. A test with the control solution is performed in the same way as a blood test, but the control solution is used instead of blood. The results of the control solution test must lie within the specified results range. This results range is printed on every test strip container.

Chemical composition of the control solution

The control solution is a red-coloured solution with a D-glucose content of less than 0.2%.

Ingredient	Percentage concentration
D-glucose	0.05 – 0.19%
Salts	1.4%
Active ingredient for viscosity regulation	15.0%

Standards

The **Beurer GL32 mg/dL measuring system** for self-testing complies with the following European Directives and standards: IVD (98/79/EC), EN 61010-1, EN 61010-2-101, EN 13640, EN ISO 15197, MDD (93/42/EC).

Comparison between measured values and laboratory values

Performance characteristics: Accuracy and precision

The blood sugar results were compared with the YSI 2300 laboratory device. At a concentration of < 75 mg/dL, $\geq 95\%$ of values were within ± 15 mg/dL, while at a sugar concentration ≥ 75 mg/dL, $> 98\%$ were within 20% of the reference values. The CV (coefficient of variation) (%) is $< 5\%$. The blood sugar measuring device is therefore comparable with a laboratory system.

10 GUARANTEE AND CUSTOMER SERVICE

Guarantee

This product comes with a 3-year guarantee for material and manufacturing faults.

The guarantee does not apply:


- in the case of damage caused by improper use
- to wearing parts
- to deficiencies of which the customer was aware at the time of purchase
- to personal negligence on the part of the customer
- in the case of third-party intervention

This guarantee does not affect your statutory rights. In order to make a claim within the warranty period, the customer is required to provide proof of purchase. Claims must be made within a period of 3 years from the date of purchase to BEURER GmbH, Söflinger Str. 218, 89077 Ulm, Germany. In the case of claims against the guarantee, the customer has the right to have the product repaired by us or in a workshop authorised by us. Further rights (of the guarantee) remain unaffected.

Customer service address

If you have any questions, please contact customer service:

 Lifestyle Marketing International Ltd.
P. O. Box 584
WN1 9EX WIGAN
Phone: +44 870 879 0812
E-mail: customerservice@lifestylemi.com

 Brandlinx Direct Limited
Hainault House
Baldonnell Business Park
Dublin 22
Phone: +353 1 412 3606
E-mail: sales@brandlinx.ie

OUR COMMITMENT TO YOU: We aim to satisfy our customers by providing high-quality healthcare products and the best customer service. If you are not completely satisfied with this product, please contact customer service.

