

Aneroid barometer

LABOTRIX BARO G7

PRODUCT PASSPORT

Kyiv

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1. General Information about the Product

- 1.1. **Product name** — Aneroid barometer.
- 1.2. **Trademark** — Labotrix.
- 1.3. **Model** — Baro G7; full trade designation — LABOTRIX BARO G7.
- 1.4. **Manufacturer** — Labotrix Group Limited, China.
- 1.5. **Intended use:** an aneroid barometer intended for approximate observation of fluctuations in atmospheric pressure and for measuring it. The device displays pressure in millimeters of mercury or hectopascals. It is used in physics, geography, and natural science lessons at general education institutions and research laboratories for studying atmospheric phenomena and climate patterns.
- 1.6. **Design features:** the sensing element of the device is an aneroid capsule — a sealed metal capsule containing rarefied air. When atmospheric pressure changes, the capsule contracts or expands, transmitting the deformation through a mechanical transmission mechanism to the pointer needle on the dial. The device has two measurement scales (mmHg and hPa), a two- or single-row pointer depending on the configuration, and a dial diameter of 100 mm.

2. Technical Specifications

- Brand — Labotrix
- Model — Baro G7
- SKU — LTX-BARO-G7
- Product type — demonstration aneroid barometer
- Measuring range (hectopascal) — 940-1060
- Scale units — millimeters of mercury and hectopascals
- Value of the main scale division (hectopascal) — depends on the design
- Measurement accuracy in the range of 990-1030 hPa (hectopascal) — ± 5
- Measurement accuracy in the range of 940-990 hPa and 1030-1060 hPa (hectopascal) — ± 10
- Diameter of the device (millimeter) — 100
- Operating temperature range (degree Celsius) — from +5 to +40
- Placement method — hanging on the wall or mounting on a stand panel
- Mounting methods — a nail or a clear plastic ring
- Power source — none, the device operates autonomously
- Calibration — factory, performed by the manufacturer before shipment; an adjustment screw is provided on the back panel for fine-tuning the readings at the place of use
- Language of marking and operating documentation — Ukrainian
- Product marking — trademark, model and a space for applying the inventory number
- Packaging — individual box of corrugated cardboard with the contents secured
- Documentation supplied — passport with warranty card and operating instructions
- Operating conditions — premises of an educational institution, air temperature from +5 to +40 °C, relative humidity from 40 to 60 % without condensate

- User requirements — adjustment (if necessary) and preparation are performed by the teacher or laboratory assistant; students work with the device under supervision
- Scale readability — high-contrast divisions and numbers, convenient for reading from a distance during a group demonstration
- Service life (year) — 5
- Warranty period (month) — 12

3. Package Contents

- Aneroid barometer with dial and scales — 1 pcs
- Clear plastic ring for panel mounting — 1 pcs
- Product Passport and Warranty Card — 1 pcs
- Individual transport packaging — 1 pcs

The device is supplied without additional accessories. A small nail is sufficient for wall mounting. The product does not require assembly before first use.

4. Safety Precautions

4.1. General requirements

- Before first use, read this passport and thereafter keep it together with the product and the document of purchase.
- A barometer — a sensitive measuring instrument. Only trained persons who have completed instruction are authorized to work with it.
- Inspect the unpacked device to identify any possible damage. Devices with cracked glass, a damaged base, or a loose mechanism must not be used.
- Carry the device carefully, holding it by the housing, not by the dial.

4.2. Mechanical safety

- Protect the barometer from impacts, drops, and strong vibration — this may damage the aneroid capsule and render the device unfit for use.
- Do not allow direct sunlight to reach the device, as it may cause the gas inside the capsule to expand.
- Do not install the device near heat sources, vibrating devices, or magnets.

4.3. Work with glass

- The barometer's dial is covered with glass. If the glass breaks, sharp fragments may form — this could injure the skin.
- If the glass breaks, stop using the device and clear the area of fragments in a safe manner.

4.4. It is strictly prohibited

- Disassembling the device or interfering with its internal mechanism (except for the adjustment screw on the back panel).
- Using solvents, alcohol, acetone, or abrasive agents for cleaning.
- Immersing the barometer in water or washing it under running water.
- Using the device outside the temperature range (from +5 to +40 °C) or storing it in a humid environment.

5. Preparation for Use

- 5.1. Free the device from its packaging and unpack all components. Check for a delta protector and protective tape on the dial, if present, and remove them.
- 5.2. Check the completeness of the set against Section 3 of this passport and inspect the device for absence of mechanical damage.
- 5.3. Choose a mounting location: a wall or a stand panel, and make sure the surface is clean and dry.
- 5.4. Secure the barometer using one of the following methods: drive a small nail into the wall at eye level, or place the device on a horizontal panel using a clear plastic ring.
- 5.5. The device is calibrated at the manufacturer's factory, so it does not require mandatory adjustment before first use. If you wish to fine-tune the reading for your location, find out the current atmospheric pressure value from your local meteorological service or from open meteorological sources.
- 5.6. If necessary, use a small screwdriver to turn the adjustment screw on the back of the barometer so that the black pointer shows the pressure value known to you. Turning the screw counterclockwise increases the reading, and clockwise — decreases it. While adjusting, lightly tap the dial with your finger to stabilize the readings. Compare the readings with local sources for 3–4 days and make very minor corrections if necessary.

6. Operating Procedure

6.1. Taking Readings

The reading is taken from the position of the black pointer needle on the dial. Choose one of the two scales (mmHg or hPa) and consistently take readings using the same scale.

6.2. Observing Pressure Changes

If the barometer has an additional manually adjustable reference pointer, align it with the pointer needle after each reading. At the next observation, the difference in the position of the pointers will show how much the atmospheric pressure has changed.

6.3. Converting Units

If necessary, convert the reading to other units: multiply inches of mercury by 25.4 to convert to mmHg, or multiply by 33.85 to convert to hPa. Conversely, multiply mmHg by 0.0394 to convert to inches, and hPa — by 0.0295.

6.4. Long-Term Observations

To study atmospheric phenomena, take barometer readings at the same times of day for several days or weeks, recording the date, time, and pressure value.

6.5. Finishing the work

When finished, make sure the device is securely fixed in place and has not sustained any damage. Save the observation records in the experiment log for further analysis.

7. Care, Maintenance and Troubleshooting

7.1. Cleaning

- Wipe the housing and plastic parts with a dry, soft cloth.
- Wipe the dial and glass gently, without pressure, to avoid damaging the scale. If necessary, use a cloth lightly moistened with distilled water, and wipe dry.
- It is strictly forbidden to use solvents, alcohol, acetone, abrasive powders, or metal brushes — they damage the coating and the scale printing.
- Do not wash the device under running water or immerse it in water.

7.2. Periodic inspection

- At least once every three months, check that the adjustment screw is functioning properly by turning it in both directions to make sure it does not jam.
- Monitor the condition of the glass and dial for cracks, fogging, or moisture inside the device.
- The device is calibrated by the manufacturer and does not require recalibration; the only maintenance operation on the user's part — the periodic check of the adjustment screw described above. Repairs are performed only by an authorized service center.

7.3. Possible malfunctions and methods of their elimination

Symptom	Possible cause	User actions
The pointer does not move or moves with a delay	The mechanism is contaminated with dust; the device is located in a vibration zone	Check the placement of the device, remove any sources of vibration nearby; clear the device of accumulated dust by blowing on it from a distance
The reading does not change for several days in a row	This is normal in a zone of stable atmospheric pressure; the device is functioning properly	Compare the reading with the locally known pressure; if necessary, adjust it using the adjustment screw on the back panel
The glass has fogged up or moisture has gotten inside	Significant temperature change; the device was stored in a humid environment	Keep the device in a warm, dry place for several hours; dry it to remove the moisture
The screw does not turn or turns with difficulty	The screw is rusty or jammed	Do not force the screw; clear the device of condensation; contact the service center

Symptom	Possible cause	User actions
The pointer sticks or does not return to "zero"	The transmission mechanism is deformed from an impact	Stop using the device and contact the seller or service center
The dial is unclear or the printing has worn off	Improper cleaning; the age of the device	Do not attempt to restore the printing; contact the seller to have the device inspected

8. Storage and Transportation Conditions

- Store the barometer in a dry, well-ventilated room at a temperature of no lower than +5 and no higher than +40 °C and relative humidity up to 80% without condensation.
- Position the device horizontally or hang it on a nail. Do not lay it flat side down on the bottom of the box, as this may cause deformation of the aneroid capsule.
- Protect the product from dust, direct sunlight, impacts, vibration, and exposure to aggressive substances and their vapors.
- For transportation over long distances, pack the barometer in rigid packaging with shock-absorbing material (rubber, foam) on all sides. By any type of enclosed transport.
- During transport in cold periods, keep the device in its packaging and let it sit at room temperature before unpacking to prevent condensation from forming.
- The storage period before commissioning is unlimited provided that the stated requirements are observed.

9. Warranty Obligations

- 9.1. The warranty period of operation of the product is 12 months from the date of sale specified in the warranty card.
- 9.2. The manufacturer guarantees that the product conforms to the declared technical specifications provided that the transportation, storage and operating rules set out in this passport are observed.
- 9.3. During the warranty period, defects of the product that have arisen through the fault of the manufacturer are remedied free of charge. The method of remedy (repair, replacement of a component or replacement of the product) is determined by the service center.
- 9.4. Warranty service is provided on presentation of a correctly and completely filled-in warranty card and of a document confirming the fact and the date of purchase.
- 9.5. The warranty does not cover cases where the malfunction is caused by:
 - mechanical damage, in particular cracks, chips and deformation of the housing and of the components of the product;
 - violation of the operating, storage or transportation rules set out in this passport;
 - ingress of liquid or foreign objects into the product, and also the action of insects and animals;

- independent disassembly, repair or modification of the product, in particular repair at unauthorized workshops;
- use of the product other than for its intended purpose;
- force majeure circumstances (fire, flood, earthquake, etc.).

9.6. The warranty does not cover the natural wear of the coating and of the appearance of the product, nor consumables.

10. Product Disposal

- The product must not be disposed of together with unsorted municipal waste. This is indicated by the marking in the form of a crossed-out container on the product or its packaging.
- After the end of the service life, hand the product over to a collection point for the corresponding waste or to an organization holding the appropriate permit.
- Hand over the packaging elements (cardboard, polymer materials) to the corresponding streams of recyclable materials.

Contacts

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Conditions of use and storage of the product

The product is intended for educational work in general secondary education institutions and is used only under the control and supervision of a teaching staff member; the recommended age of students — from 10 years, that is, students of grade 5 and of higher grades. Keep the product in a dry, clean and ventilated room at a temperature from +5 to +40 °C and relative air humidity up to 80 % without condensation, separately from heat sources and out of direct sunlight, moisture and dust. Use the product exclusively for its intended purpose and do not allow drops, impacts or other mechanical damage. If you notice damage, a crack or any malfunction, stop working with the product immediately and inform the teacher or the responsible person of the educational institution; repairing the product on your own is prohibited.

WARRANTY CARD

Name:	Aneroid barometer
Product model:	LABOTRIX BARO G7
Serial number:	
Date of sale:	
Warranty period:	12 months from the date of sale
Trading organization:	
Signature of the seller:	

The goods have been received in working order, without visible damage, complete, and have been checked in my presence. I have no claims regarding the quality of the goods; I have read and agree to the operating and warranty service conditions.

Full name of the buyer _____

Telephone of the buyer _____ Signature of the buyer _____

Dear Customer!

Thank you for choosing Labotrix products. After-sales service of this product is provided in accordance with the regulations of the company and the legislation of the country of sale. So that we can serve you quickly and without unnecessary formalities, check that this warranty card is filled in correctly at the moment of purchase and keep it together with the payment document throughout the entire warranty period. When applying for repair, hand the product over to the seller or to the service center together with the filled-in card.

Procedure for applying

1. The right to free warranty service of the product is valid for 12 months from the date of sale specified in the warranty card. Within this period, components that have failed because of a manufacturing defect are repaired or replaced at no cost to the buyer.
2. Before applying, make sure that the malfunction is not caused by the reasons listed in section 9 of this passport and, if possible, use the table of possible malfunctions in subsection 7.3.
3. After the end of the 12-month warranty period, repairs are performed on a paid basis; the cost of the work and of the spare parts is determined depending on the nature of the malfunction.

Grounds for refusal of warranty service

The company reserves the right to refuse free service or to perform the work on a paid basis if at least one of the following circumstances is established:

- absence of the warranty card, its incomplete or corrected completion, and also the absence of a document confirming the purchase;
- non-conformity of the serial number of the product with the number specified in the card, or damage to the factory marking;
- traces of independent disassembly, repair or modification of the product;
- damage caused by violation of the operating rules, connection to an unsuitable power source or external mechanical impact;
- damage as a result of force majeure circumstances.

Service Records

Date of entry	Description of the malfunction	Work performed	Position, signature, full name of the responsible person