

Laser range finder

LABOTRIX RANGER G5

PRODUCT PASSPORT

Kyiv

2026

1. Basic product information

- 1.1. Product name — Laser rangefinder.
- 1.2. Trademark — Labotrix.
- 1.3. Model — Ranger G5; full trade name — LABOTRIX RANGER G5.
- 1.4. Manufacturer — Labotrix Group Limited, China.
- 1.5. Intended use: The laser rangefinder is designed for quick and accurate determination of distances and linear dimensions of rooms - length, width, height. In addition to direct measurement, it automatically calculates area and volume, performs indirect measurements using the Pythagorean theorem, adds and subtracts results and stores them in memory. It is used in educational institutions in mathematics, physics and technical disciplines for practical study of measurement and geometry.
- 1.6. Design features: The device is equipped with a class 2 laser source for aiming at the target object, a digital display for displaying measurement results, a set of functions for calculating area, volume and indirect measurements, a memory for storing up to 99 data sets. Power is provided by two AA batteries, which are not included in the delivery set. The case is made of impact-resistant plastic.

2. Technical specifications

- Brand — Labotrix
- Model — Ranger G5
- The article number is LTX-RANGER-G5
- Device type — digital laser rangefinder
- Measuring range (meter) - depending on the modification (40, 50, 60, 80, 100 or 120)
- Measurement error (millimeter) is $\pm(2 + 5 \cdot 10^{-5} \times D)$, where D is the distance in millimeters; at a distance of 1 m this corresponds to approximately ± 2
- Continuous measurement is available
- Area and volume measurements are available
- Measurements using the Pythagorean theorem are
- Adding and subtracting results is
- Results memory (set) - up to 99
- Laser — class 2, wavelength 630–670 nm, power less than 1 mW
- Automatic laser shutdown (second) — 30
- Automatic device shutdown (second) - about 180
- Sound indication — yes
- Operating temperature range (degrees Celsius) - from 0 to 40
- Storage temperature range (degrees Celsius) - from -20 to 60
- Relative humidity during storage (percentage) - from 20 to 80

- Power source — 2 AA batteries (1.5 V), not included
- Dimensions of the device body, L×W×D (millimeters) — 110 × 48 × 25
- Language of marking and operating documentation — Ukrainian
- Product marking — trademark, model and a space for the inventory number
- Documentation supplied — product passport with warranty card and operating manual
- Packaging - individual box with fixing of components
- Ready to use - comes assembled, only requires battery installation
- User requirements - work with the device is allowed under the supervision of a teacher
- Service life (year) — 5
- Warranty period (month) — 12

3. Equipment

- Laser rangefinder assembly — 1 pc.
- User manual — 1 pc.
- Fabric storage case — 1 pc.
- Transparent bag for packaging — 1 pc.
- Product Passport and Warranty Card — 1 pcs
- Individual transport packaging — 1 pcs

The product is delivered fully assembled. Two AA batteries are required for operation - they are not included in the delivery package and must be purchased separately by the user. The device does not require additional assembly.

4. Safety measures

4.1. General requirements

- Please read this passport carefully before first use and keep it with the product and proof of purchase.
- The device is only allowed to be used by trained persons under the supervision of a teacher. Do not allow children to use the device without supervision.
- Inspect the unpacked device for possible damage. Devices with damaged optics, cracked displays, or damaged housings must not be used.
- Do not disassemble or repair the device yourself. Do not make unauthorized changes to the design or change the laser parameters.

4.2. Laser safety

- Laser class: class 2. The device body is marked with the words "Laser radiation. Do not stare into beam."
- Do not point the laser beam into your eyes. — neither your own nor other people's. While working with the device, the entire group must remain at a safe distance from the laser beam.

- Do not direct the beam on the surface of objects with a high reflection coefficient (mirrors, polished metals, thin windows) - the reflected beam is also dangerous to vision.
- When measuring at height, make sure the laser is not pointed at people below or to the side of the target.
- The device should not be pointed at airplanes, drones, or other flying objects.

4.3. Electromagnetic safety

- The device is a source of electromagnetic radiation and may cause interference to other equipment.
- Do not use the device near airplanes, helicopters, or medical equipment (such as aneroid barometers, pacemakers, or hearing aids).
- Do not use in a fire or explosive environment.

4.4. It is strictly forbidden

- Look into the optical window with the laser on.
- Direct the laser beam at a person or animal from any distance.
- Leave the appliance switched on unattended.
- Do not immerse the device in water or expose it to moisture.
- Do not use the device in case of falls, impacts or mechanical deformations.

5. Preparation for work

- 5.1. Unpack the device and unpack all components. Keep the cloth cover for safe storage and transportation.
- 5.2. Check the completeness of the set according to section 3 of this passport. Pay special attention to the optical window and display - they must be intact and clean.
- 5.3. Install the batteries. Open the battery compartment on the back of the device, install two AA batteries (not included, purchased separately) observing the polarity (indicated inside the compartment) and close the cover.
- 5.4. Press the DIST button to turn on the device. The display should show symbols and icons. If the display does not turn on, replace the batteries.
- 5.5. Verify that the laser is turned off by pressing the CLEAR/OFF button. The device should turn off after 3–5 seconds of holding the button.
- 5.6. Before use, wipe the optical window and display with a clean, dry soft cloth to ensure clear measurement.

6. Procedure

6.1. Turning on and off

Press the DIST button to turn on the device. The display will show an image. To turn off, press and hold the CLEAR/OFF button for 3 seconds. If no operation is performed, the device will turn off automatically after 180 seconds.

6.2. Single distance measurement

Press the DIST button once to turn on the laser. Aim the red laser dot at the target object. Press the DIST button again, the device will take a measurement and the result will appear on the display.

6.3. Continuous measurement

Press and hold the DIST button to enter continuous measurement mode. The display will show the current value and the maximum (MAX) and minimum (MIN) values as the device is moved. To exit the mode, press the CLEAR/OFF button.

6.4. Area measurement

Press the FUNC button once to enter the area calculation mode. Press DIST to measure the first side (length). Press DIST again to measure the second side (width). The device will automatically calculate the area of the rectangle.

6.5. Volume measurement

Press the FUNC button twice to enter the volume calculation mode. Press DIST three times in succession to measure the length, width and height of the parallelepiped. The instrument will automatically calculate the volume.

7. Care, maintenance and possible malfunctions

7.1. Cleaning

- Wipe the body of the device with a dry, soft cloth. If necessary, moisten the cloth with distilled water and wipe dry.
- Wipe the optical window and display gently, without pressure, with an exclusively soft cloth, like optical lenses.
- Do not use solvents, alcohol, acetone or abrasive powders.
- Do not immerse the device in water or rinse it under running water.

7.2. Periodic control

- Check the display and optical window for fogging, dirt, and damage at least once a month.
- Check the operation of the buttons - they should be pressed easily without creaking.
- If the device is not used for a long time, remove the batteries to prevent electrolyte leakage and contact corrosion.
- The product does not require lubrication or other maintenance by the user. Repairs should only be performed by an authorized service center.

7.3. Possible malfunctions and ways to eliminate them

Symptom	Possible cause	User actions
The instrument does not switch on	Batteries are dead; battery polarity is incorrect; contacts are dirty	Replace batteries; check polarity; wipe contacts with a soft cloth
The display does not light up.	Low batteries; display failure	Replace the batteries; if that doesn't work, contact a service center.
The laser does not emit light	Low batteries; laser turned off after 30 seconds; incorrect button press	Replace batteries; press DIST to turn on; follow the button sequence
The measurement is inaccurate.	Dirty optical window; poor target selection; low batteries; significant temperature fluctuation	Wipe optical window; use reflector plate; replace batteries; wait for temperature to stabilize
Error messages (Er010, Er011, etc.)	Exceeded range; low batteries; hypotenuse shorter than legs	Read the error codes and follow the instructions; replace the batteries; make sure the measurements are within the possible range.
The display is unclear or flickering	Lighting too bright; low battery; display fogging	Move to a shaded area; replace batteries; dry the device in a dry room

8. Storage and transportation conditions

- Store the device in a dry, ventilated room at a temperature not lower than +5 and not higher than +40 °C and a relative humidity of 20 to 80% in a fabric cover.
- Do not store the device in direct sunlight, near heat sources, radiators or temperature fluctuations.
- If the device is not used for a long time, remove the batteries to avoid electrolyte leakage and damage to the contacts.
- Protect the product from mechanical shock, falls, vibrations and exposure to aggressive substances.
- For long-distance transportation, place the device in a rigid box with shock-absorbing material (foam, corrugated cardboard). Transport by any type of closed transport.

- Do not leave the device in a sealed plastic bag in the sun - condensation may form inside.
- The storage period before commissioning is unlimited provided that the stated requirements are observed.

9. Warranty obligations

- 9.1. The warranty period of the product is 12 months from the date of sale specified in the warranty card.
- 9.2. The manufacturer guarantees that the product complies with the declared technical characteristics, provided that the rules for transportation, storage and operation set out in this passport are followed.
- 9.3. During the warranty period, product defects that have arisen due to the manufacturer's fault will be eliminated free of charge. The method of elimination (repair, component replacement or product replacement) is determined by the service center.
- 9.4. Warranty service is provided upon receipt of a correctly and completely filled out warranty card and a document confirming the fact and date of purchase.
- 9.5. The warranty does not apply to 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 apply to natural wear and tear of the coating and appearance of the product, as well as to 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

Product name:	Laser range finder
Product model:	LABOTRIX RANGER G5
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

Buyer's phone number Buyer's signature

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 for the product is valid for 12 months from the date of sale specified in the warranty card. Within this period, components that have failed due to a manufacturing defect are repaired or replaced without payment from the buyer.
2. Before contacting, 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 section 7.3.
3. After the 12-month warranty period, repairs are carried out for a fee; the cost of work and 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