

Globe model "Structure of the Sun"

LABOTRIX GLOBE G4

PRODUCT PASSPORT

Kyiv

2026

Contents

1. General Information about the Product.....	2
2. Technical Specifications.....	2
3. Package Contents.....	3
4. Safety Precautions.....	3
5. Preparation for Use.....	4
6. Operating Procedure.....	4
7. Care, Maintenance and Troubleshooting.....	5
8. Storage and Transportation Conditions.....	6
9. Warranty Obligations.....	6
10. Product Disposal.....	7
Contacts.....	8
WARRANTY CARD.....	9
Service Records.....	11

1. General Information about the Product

- 1.1. **Product name** — Model globe "Structure of the Sun".
- 1.2. **Trademark** — Labotrix.
- 1.3. **Model** — Globe G4; full trade designation — LABOTRIX GLOBE G4.
- 1.4. **Manufacturer** — Labotrix Group Limited, China.
- 1.5. **Intended use:** the model demonstrates the external appearance of the solar disk and the internal structure of the Sun in cross-section. The product shows the concentric layers — from the core through the zones of energy transfer to the visible surface and the outer layers of the atmosphere. The model is suitable for physics and astronomy classrooms and is used when studying topics on the structure of the Sun, the solar system, and phenomena of solar activity.
- 1.6. **Design features:** a globe in the shape of a sphere on a stand; the surface reproduces the appearance of the photosphere with manifestations of activity (spots, faculae, prominences, flares). One segment of the surface is removable, revealing a cross-section on which the internal layers are marked with color coding: the core, the radiative zone, the convective zone, the photosphere, the chromosphere, and the corona. After inspection, the segment is put back in place. The product has no mechanisms and does not require an electric power supply.

2. Technical Specifications

- Brand — Labotrix
- Model — Globe G4
- SKU — LTX-GLOBE-G4
- Product type — demonstration model of the structure of the Sun (globe-model)
- Shape — sphere (ball)
- Diameter of the model (millimeter) — 320
- Layers shown — the core, the radiative zone, the convective zone, the photosphere, the chromosphere, the corona
- Access to the internal structure — a removable segment of the sphere's surface
- Manifestations of activity shown — sunspots, faculae, prominences, flares
- Method of demonstration — tabletop model for frontal display and group work
- Power supply — not required
- Operating conditions — premises of an educational institution, air temperature from +5 to +40 °C, relative humidity from 40 to 60 % without condensate
- Language of marking and operating documentation — Ukrainian
- Product marking — trademark, model and a space for the inventory number
- Packaging — individual box of corrugated cardboard with the sphere and stand secured
- Documentation supplied — product passport with warranty card and operating manual

- Installation method — on the stand, on a flat surface of the demonstration table, requires no mounting
- Care of the surfaces — wiping with a dry or slightly damp cloth is permitted
- User requirements — the demonstration is conducted by the teacher, students work with the model under supervision
- Image durability — the applied marking of the layers and manifestations of activity does not wear off during normal wiping
- Service life (year) — 5
- Warranty period (month) — 12

3. Package Contents

- Model globe with a cross-section — 1 pcs
- Stand (holder) for the sphere — 1 pcs
- Mounting parts (depending on the version) — according to the packing list
- Product Passport and Warranty Card — 1 pcs
- Individual transport packaging — 1 pcs

If the set does not include a legend of the layers, use the one contained in this passport, or scientific sources. Additional reference materials are not included in the set.

4. Safety Precautions

4.1. General requirements

- Before first use, read the passport in full; students work with the model only under the supervision of an adult.
- Inspect the unpacked product for damage: the sphere must have no cracks, chips, or sharp edges on the removable segment and at the joint; the surface of the cross-section under the segment must be smooth.
- The model is not for play: do not throw the sphere, do not roll it on the floor, do not use it as a ball.
- Install on a level, stable surface, far from the edge of the table, away from walkways and away from open windows.

4.2. Working with the Sun

- **IT IS STRICTLY PROHIBITED** observing the Sun with the naked eye, through a telescope, binoculars, a magnifying glass, or any other optics. Direct viewing causes an irreversible burn of the retina within a fraction of a second, without pain or visible signs, until eyesight is lost.
- Do not point any optical instrument from the classroom at the real Sun.
- Permitted ways of viewing the Sun: projecting its image through a telescope onto a white screen (the teacher aims the instrument, students do not look into the eyepiece), factory-certified glasses or filters for observing eclipses, photographs and videos from scientific sources.
- Repeat the prohibition before every lesson about the Sun and separately before holidays and astronomical events.

4.3. Protection against injuries

- Do not lean on the sphere, do not hang foreign objects on it, and do not place heavy items on the product.
- Carry the model with both hands, holding the sphere from below, not by the removable segment or the stand.
- Hold and turn the sphere without jerks and without force; do not spin it "for speed".
- Make sure that the edge of the removable segment or of the opening beneath it does not injure hands; if a burr or chip appears, do not allow the model to be used for lessons.

4.4. It is strictly prohibited

- Disassembling the model and enlarging the cross-section without the manufacturer's permission.
- Heating the sphere near radiators, heaters, spirit burners, candles, and leaving it under direct sunlight.
- Immersing in water, washing under running water or in a dishwasher.
- Using abrasive powders, solvents, acetone, alcohol, or chlorine-based agents for cleaning.
- Using solvent-based adhesives to repair a cracked sphere: they corrode the plastic.

5. Preparation for Use

- 5.1. Unpack the model carefully, remove the packaging material and transport labels.
- 5.2. Check the completeness against the packing list and the product passport; keep the packaging for storage and transportation.
- 5.3. Inspect the sphere and the stand for mechanical damage; a product with cracks and sharp edges must not be used.
- 5.4. Assemble the model by placing the sphere on the stand and checking that the removable surface segment fits snugly in its place; make sure that the sphere is held without wobbling, but without excessive tightening.
- 5.5. Wipe the dust off the model with a soft dry cloth.
- 5.6. Choose a location for the display: a flat surface of the demonstration table, away from heating appliances, direct sunlight, and walkways.
- 5.7. Remove the segment, turn the cross-section toward the class, and check from the back desks whether the layers can be distinguished; if not, plan the demonstration in groups or duplicate the diagram on the board.
- 5.8. Read the table of layers and check the names on the model against the names used by the current textbook.

6. Operating Procedure

6.1. Showing the whole surface

Place the model with the surface toward the class, find and name the manifestations of activity: sunspots, faculae along the edge, prominences and flares. Explain that observing the real Sun is dangerous and prohibited.

6.2. Display of the layers in cross-section

Remove the surface segment and turn the sphere with the open side toward the class. Move the pointer from the surface inward, naming the layers in sequence: photosphere (visible surface) → chromosphere → corona → convective zone → radiative zone → core. Repeat in reverse order, tracing the path of energy from the center outward.

6.3. Demonstration of the parts

Point with lines and a pointer, not with your finger — handprints are visible and wear off the paint. Draw attention to the edge of the cross-section, where the photosphere — the visible surface of the Sun — is shown as a thin layer, and to the center, where the layers of the cross-section converge.

6.4. Work in groups

Give each group a specific task: name the layers in order, find the manifestations of activity, compare the thickness of the layers. Limit the working time to 3–5 minutes.

6.5. Finishing the work

Before putting the model away, return the surface segment to its place. Remove the model from the demonstration table with a smooth motion; do not roll the sphere and do not allow students to leave the product on the edge of the table or on a windowsill.

7. Care, Maintenance and Troubleshooting

7.1. Cleaning

- Regularly wipe the surface of the sphere and the stand with a dry soft cloth.
- Clean the recesses of the cross-section and the joint of the sphere with the stand using a soft dry brush.
- Remove visible soiling with a cloth very slightly moistened with neutral water, and wipe dry immediately.
- The use of alcohol, acetone, solvents, abrasive powders, and hard sponges is prohibited.

7.2. Periodic inspection

- At least once a month, check the reliability of the sphere's attachment to the stand; the sphere must not wobble.
- Monitor the integrity of the removable segment and the edge of the opening beneath it; burrs and wear spread quickly.
- Check whether the segment, after being removed and put back in place, is held snugly, without play.
- The product does not require lubrication or maintenance on the part of the user; entrust repairs to an authorized service center.

7.3. Possible malfunctions and methods of their elimination

Symptom	Possible cause	User actions
The sphere wobbles on the stand	The mount has loosened	Tighten the fastening in accordance with the passport of the product
The model tilts and slides	Uneven table surface	Move it to a level surface; remove foreign objects
The layers are not visible from the back desks	The scale of the details is too small for the class	Show the model in groups or duplicate the diagram on a screen
The colors have faded, the layers are poorly distinguished	Prolonged action of direct sunlight	Move it to a shaded place; the fading is irreversible
Scratches on the removable segment or at the cross-section	Contact with sharp objects	Do not use the model with sharp edges
Crack or chip on the sphere	Drop or impact	Withdraw the product from service; contact the supplier

8. Storage and Transportation Conditions

- Store in a dry enclosed room at a temperature of not below +5 and not above +40 °C, relative air humidity of not more than 80 % without condensation.
- Protect from direct sunlight: in a shaded place the model retains the brightness of its colors much longer.
- Do not place near heating radiators, heaters, air conditioners, and fans.
- During the off-season and when transporting, pack the product in the factory box with soft material; do not place heavy items on the packaging.
- Do not place the model on the edges of shelves or in walkways, where it can be knocked by hand.
- The storage period before commissioning is unlimited provided that the above-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 is not electrical or electronic equipment, therefore the marking in the form of a crossed-out container does not apply to it.
- After the end of the service life, the product is disposed of according to the rules established at the institution that operated it, with prior separation by materials.
- Hand over the packaging elements (cardboard, polymer materials) to the corresponding streams of recyclable materials.

Contacts

LABOTRIX GROUP LIMITED

Room 910, Isteeasia 1 No. 18 Fu'an Blvd, Pinghu Subdistrict,
Longgang District, Shenzhen City,
Guangdong Province, China 518111
Phone: +86 13925261264
E-mail: salesmanager@labotrix.com
Website: <https://labotrix.com/>

Address in Ukrainian:

LABOTRIX GROUP LIMITED

Room 910, Istilazia 1, Fuan Boulevard No. 18,
Pinghu Subdistrict, Longgang District,
Shenzhen, Guangdong Province, China 518111
Telephone: +86 13925261264
E-mail: salesmanager@labotrix.com
Website: <https://labotrix.com/>

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:	Globe model "Structure of the Sun"
Product model:	LABOTRIX GLOBE G4
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