

Spectroscope with a set of spectral lamps

LABOTRIX SPECTRA S2

PRODUCT PASSPORT

Kyiv

2026

Contents

1. Product Basics
2. Technical specifications
3. Equipment
4. Safety precautions
5. Preparation for work
6. Procedure
7. Care, maintenance and possible malfunctions
8. Storage and transportation conditions
9. Warranty obligations
10. Product disposal

Contacts

WARRANTY CARD

Service notes

1. Basic product information

- 1.1. Product name — Spectroscope with a set of spectral lamps.
- 1.2. Trademark — Labotrix.
- 1.3. Model — Spectra S2; full trade name — LABOTRIX SPECTRA S2.
- 1.4. Manufacturer — Labotrix Group Limited, China.
- 1.5. Intended use: The product is intended for physics classrooms in educational institutions: with its help, students observe continuous and line spectra with their own eyes and determine the wavelengths of gas radiation while studying the topic "Optics". Looking at the spectrum of one of the lamps in the set through the eyepiece, the student compares the visible line with the division of the built-in scale and immediately obtains the wavelength value without performing additional calculations. The equipment is used in physics lessons and during practical and laboratory work in science classrooms.
- 1.6. Design features: The optical system of the device decomposes light into a spectrum: the beam from the switched-on lamp falls on a narrow entrance slit, and then on a dispersing element; the observer sees the resulting spectrum in the eyepiece along with a wavelength scale and immediately takes the value of the desired line without performing calculations. The device is mounted on a stable metal base with a diameter of 140 mm, the total height of the structure is 220 mm. The current to the installed lamp is supplied by a complete power supply: it is he who excites an electric discharge in the lamp, which creates the observed spectrum.

2. Technical specifications

- Brand — Labotrix
- Model — Spectra S2
- The article number is LTX-SPECTRA-S2
- The principle of operation is the decomposition of the light beam by the dispersive element of the device.
- Spectroscope type - direct reading, with built-in wavelength scale
- Number of spectral lamps in the kit (pieces) — 6
- Observed spectra — continuous and line-like
- Gases in spectral lamps - helium, neon, hydrogen, mercury, argon, krypton
- Power supply for spectral lamps - AC network with voltage 220–230 V, frequency 50 Hz, via the complete power supply unit
- The base material of the device is metal.
- Base diameter (millimeter) — 140
- Device height (millimeter) — 220
- 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
- Documentation supplied — product passport with warranty card and operating manual
- Packaging for delivery - individual box with contents fixation
- Installation method - on a flat horizontal table surface
- Ready to use - supplied ready to use, no additional assembly or adjustment required
- User requirements - work with the set's lamps is organized by the teacher, students observe the spectra only under direct supervision
- Service life (year) — 5
- Warranty period (month) — 12

3. Equipment

- Direct reading spectroscope with built-in wavelength scale on a metal base — 1 pc.
- Set of spectral lamps (helium, neon, hydrogen, mercury, argon, krypton) — 6 pcs.
- Power supply for spectral lamps — 1 pc.
- Power cable — 1 pc.
- Product Passport and Warranty Card — 1 pcs
- Individual packaging — 1 pcs

The product is supplied ready to use and does not require additional assembly. A continuous spectrum source for comparative observations (e.g., an incandescent lamp) is not included in the kit and must be provided by the educational institution independently.

4. Safety measures

4.1. General requirements

- Before first use, carefully read this passport and the manufacturer's instructions; keep them with the product and the purchase document.
- The device is used under the guidance of a teacher or other trained adult; students work with the set only under direct supervision.
- After unpacking, inspect the spectroscope and each lamp in the set: the lamp bulbs should be intact, without cracks or chips, and the optical scale of the instrument should be clean and undamaged.
- Students are not allowed to work independently with the lamps in the set: only a teacher or laboratory assistant can install and replace lamps in the socket.

4.2. Safety when working with a mercury spectral lamp

- The kit includes a lamp filled with mercury vapor. Before each use, check the integrity of its bulb; a lamp with a crack, chip or broken seal is prohibited from use.

- If a mercury lamp breaks, immediately turn off the power supply, remove students from the room, and thoroughly ventilate the room; it is forbidden to collect glass and mercury residues with bare hands, a broom, or a vacuum cleaner - use personal protective equipment and a special demercurization kit.
- Do not allow students to the area where the lamp was broken and mercury spilled until the demercurization of the room is complete.
- A used or damaged mercury lamp must not be thrown away with household waste: it must be handed over as mercury-containing waste to a specialized organization that has the appropriate permit for hazardous waste management.

4.3. Safety when working with other spectral lamps and power supply

- The lamps become hot during operation; do not touch them with bare hands immediately after switching off, let them cool down first.
- Before switching on, check the power cable; do not use the appliance with a damaged cable or plug.
- Do not allow moisture to get on the power supply, lamp, and electrical contacts of the lamp holder.
- To observe the spectrum, use only the eyepiece of the instrument; do not look at the switched-on lamp with the naked eye closely or for a long time.

4.4. It is strictly forbidden

- Turn on the spectroscope without a lamp installed or with a lamp whose bulb is damaged.
- Disassemble the device, lamps or power supply and make changes to their design.
- Leave lights on unattended.
- Independently clean up the consequences of a broken mercury lamp without using demercurization agents.
- Apply a voltage to the device that exceeds that specified in the passport.

5. Preparation for work

- 5.1. Unpack the spectroscope, power supply, and lamps of the set; inspect each component for any damage sustained during shipping.
- 5.2. Place the spectroscope on a horizontal, stable table surface in a place protected from direct sunlight and drafts.
- 5.3. Wipe the exterior surfaces of the appliance and the base with a dry, soft cloth to remove dust.
- 5.4. Choose a spectral lamp based on the topic of the lesson and carefully install it into the power supply socket, holding the lamp by the base.
- 5.5. Check that the power supply connecting cable is not damaged and that the mains voltage corresponds to the value specified in the passport and on the power supply.

- 5.6. Before first switching on, make sure that the device and lamp are installed stably and cannot fall during observation.

6. Procedure

6.1. Preparing the device for observation

Position the spectroscope so that the entrance slit of the instrument is directed towards the switched-on spectral lamp at a distance that provides sufficient brightness of the spectrum in the eyepiece.

6.2. Observation of the line spectrum

Turn on the power supply of the selected spectral lamp. Looking through the eyepiece of the instrument, find the image of the spectral lines and the wavelength scale aligned with them. Each bright line corresponds to a specific wavelength of the lamp's gas emission, which is read directly from the scale.

6.3. Measurement of spectral line wavelength

Compare the position of the selected spectral line with the graduations of the wavelength scale in the eyepiece and read the value in nanometers. If necessary, compare the obtained value with the reference data for the gas filled in the lamp.

6.4. Continuous spectrum observation

To observe a continuous spectrum, use an external white light source, such as an incandescent lamp, directed at the instrument's entrance slit instead of the kit's spectral lamp.

6.5. Completion of work

- Turn off the lamp's power supply and allow the lamp to cool without touching its bulb with bare hands.
- Carefully remove the lamp from the socket, holding it by the base, and return it to its storage location in the packaging.
- Wipe the exterior surfaces of the device with a dry cloth and place it in its individual packaging.

7. Care, maintenance and possible malfunctions

7.1. Cleaning

- Wipe the exterior surfaces of the appliance and the base with a dry or slightly damp soft cloth.
- Clean the optical elements of the device (slit, scale, eyepiece) only with a dry soft brush or special paper for optics, without touching them with your fingers.
- Do not use solvents, alcohol, acetone, or products containing chlorine.
- Wipe the bulbs of spectral lamps only when they are cold and turned off with a dry cloth, without wet cleaning.

7.2. Periodic control

- Periodically check the integrity of the bulbs of all spectral lamps in the set, especially the mercury one.
- Check the power cable and the socket contacts for damage and oxidation.
- The device does not require user calibration; repairs and maintenance should only be performed by an authorized service center.

7.3. Possible malfunctions and ways to eliminate them

Symptom	Possible cause	User actions
The spectrum is not visible or is very dim	The lamp is not fully ignited; the inlet slit or optics are dirty.	Wait for the lamp to discharge steadily; carefully clean the optics
The lamp does not light up.	The lamp is not locked in the socket; the power supply is faulty.	Check the lamp installation; contact a service center.
The wavelength scale is poorly visible.	Contamination of optics or excessive external lighting	Wipe the optics; observe in a darkened room.
The image in the glasses is blurry.	Incorrect eye distance relative to the eyepiece	Change the distance to the eyepiece until a clear image is obtained.
The power supply does not turn on.	Damaged cable; no voltage in the socket	Check the cable and socket; replace the cable if necessary.
The lamp goes out during observation	Contact failure in the socket; lamp overheating	Turn off the power, let the lamp cool down, check the contact in the lamp holder

8. Storage and transportation conditions

- Store the spectroscope and the set's lamps in individual packaging, in a dry room at a temperature of +5 to +40 °C and a relative humidity of no more than 80%.
- Store the lamps in an upright position, separate from each other, to avoid the bulbs hitting each other.
- Protect the device and lamps from direct sunlight, vibration and mechanical shock.
- Transport the device and lamps in the original or similar rigid packaging with shock absorption by closed transport, avoiding shocks.
- Do not place heavy objects on the packaging with the instrument.

- 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

LABOTRIX GROUP LIMITED

Room 910, Isteelesia 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

Product name:	Spectroscope with a set of spectral lamps
Product model:	LABOTRIX SPECTRA S2
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