



Medical–Biological
Research & Technologies

ALA-1/4

Multichannel Automatic Luminescence Analyser



Operating Manual
Certificate

for version
V.2AW

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1. Safety Precautions

The following symbol means:



Caution: Make sure you have fully read and understood the present Manual before using the equipment. Please pay special attention to sections marked by this symbol.

GENERAL SAFETY

- Use only as specified in the operating manual provided.
- Save the unit from shocks and falling.
- After transportation or storage, keep the unit under room temperature for 2-3 hrs. before connecting it to the electric circuit.
- Before using any cleaning or decontamination methods except those recommended by the manufacturer, check with the manufacturer that the proposed method will not damage the equipment.
- Do not make modifications in design of the unit.

ELECTRICAL SAFETY

- Connect only to electric circuit with voltage corresponding to that on the serial number label.
- Ensure that the switch and plug are easily accessible during use.
- Do not plug the unit into an ungrounded power socket, and do not use an ungrounded extension lead.
- Disconnect the unit from electric circuit before moving. Switch the unit off and disconnect the power cord plug from power socket to disconnect the unit from electric circuit.
- It is the user's responsibility to carry out appropriate decontamination if hazardous material is spilt on or penetrates into the equipment. If liquid penetrates into the unit, disconnect it from electric circuit and have it checked by a repair and maintenance technician.
- Do not operate the unit in premises where condensation can form. Operating conditions of the unit are defined in the Specifications section.

DURING OPERATION

- Do not operate the unit in environments with aggressive or explosive chemical mixtures. Please contact manufacturer for possible operation of the unit in specific atmospheres.
- Do not operate the unit if it is faulty or was installed incorrectly.
- Do not use outside laboratory rooms.
- Do not operate the unit while the lid is open.

BIOLOGICAL SAFETY

- It is the user's responsibility to carry out appropriate decontamination if hazardous material is spilt on or penetrates into the equipment.

2. General Information

Multi channel rotor-type Fluorimeter developed for the end-point PCR product detection. It is a 4 channel high speed detector of Fluorescence/quenching of DNA probe conjugated with a fluorescence/quenching molecules. Level of fluorescence depends on a quantity of a positive amplification after thermocycling of DNA probes. The instruments substitute electrophoresis and gel-documentation steps of amplicon detection. The close tubes method ensures a biosafety conditions in the DNA diagnostic Labs.

The product consists of the following main parts:

- A rotor with tubes sockets fixed on the motor axis
- Optical module
- Microprocessor module

The operation is based on detection of fluorescent radiation of a certain wavelength that is created in the reaction material by a certain wavelength light from the excitation radiation source. The detection is performed in each tube one after another which are delivered to the optical block by the motor. The microprocessor module controls the operation of the analyser main parts and data exchange with the controlling PC.

3. Getting started

3.1. Unpacking

Remove packing materials carefully and retain them for future shipment or storage of the unit.

Examine the unit carefully for any damage incurred during transit. The warranty does not cover in-transit damage.

Warranty covers only the units transported in the original package.

3.2. Complete set. Package contents:

Standard set

- Automatic Luminescence Analyser ALA1/4 1 pce.
- Spare fuse 1 pce.
- Rotor for 0.5 ml tubes 1 pce.
- Rotor for 0.2 ml tubes 1 pce.
- Data Cable..... 1 pce.
- Software installation disc 1 pce.
- Software installation manual..... 1 copy
- Software operating manual..... 1 copy
- Software Quick Start..... 1 copy
- Operating Manual, Certificate..... 1 copy

3.3. Place the unit on a suitable working surface away from sunlight and bright light other strong sources.

3.4. Connect the unit to the PC via USB port on the Analyser rear side using the supplied data cable.

3.5. Connect the power cord to the mains power socket on the rear side of the device.

3.6. Install the software (supplied separately) following the Software installation and operation manual.

4. Operation

4.1. Connect the power cord to the mains outlet.

4.2. Switch ON the power switch on the rear. The analyser turns on and the display shows "ALA_X.XX.X".



Attention!

It is necessary to allow 15 min time for warming up before conducting detection.



Attention!

If the Analyser was turned off for longer period (more than 7 days), it is necessary to turn it on and allow long warm-up time (about 8 h).

4.3. Operation with the software is described in the manual supplied with the software (supplied separately).

4.4. Rotor installation and removal

Rotor removal. The rotor is secured with the latch (fig.1). Unscrew the latch (anticlockwise) and remove the rotor.

Rotor installation. Install the rotor into the analyser. The positioning pin on the base inside the unit must match into the opening in the rotor. Secure the new rotor carefully and turning the latch tightly.



Caution!

Do not operate the unit while the lid is open.



Caution!

Remove the latch before taking out the rotor. Always secure the rotor with the latch after installation.



Fig. 1. Latch

4.5. During operationm the following warning indication may appear on the analyser display:

<i>Exception 01</i>	failure at filter initial positioning
<i>Exception 02</i>	failure at filter positioning for the given channel
<i>Exception 04</i>	the rotor not installed or installed in the wrong way. It can also indicate the rotor position sensor failure.

4.6. At the end of operation, close the ALA_1 software saving the necessary data.

4.7. Turn OFF the mains switch on the rear. Unplug the unit from the mains outlet.

5. Specifications

The unit is designed for operation in cold rooms, incubators and closed laboratory rooms at ambient temperature from +4°C to +40°C in a non-condensing atmosphere and maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.

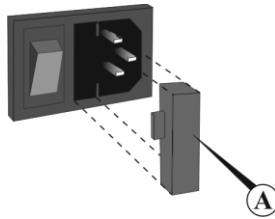
5.1.	Number of detection channels	4
5.2.	Detector	Photomultiplier
5.3.	First Channel FAM	
	excitation wavelength	460 nm
	emission wavelength	515 nm
5.4.	Second Channel JOE, HEX, R6G	
	excitation wavelength	532 nm
	emission wavelength	570 nm
5.5.	Third Channel ROX	
	excitation wavelength	570 nm
	emission wavelength	610 nm
5.6.	Fourth Channel CY-5	
	excitation wavelength	630 nm
	emission wavelength	670 nm
5.7.	Rotor capacity	
	R-036	36 x 0.5 ml tubes
	R-048	48 x 0.2 ml tubes
5.8.	Measurement time	
	(rotor R-036, 1 channel)	55 s
5.9.	Excitation source	Light diode (Luxeon), through interference filter
5.10.	Interference filter transmission spectrum half-width	7 nm
5.11.	Number of measurements per sample in detection mode	2000
5.12.	Interface cable	USB
5.13.	Input voltage	230V; 50/60 Hz
5.14.	Power consumption, no more than	30 W
5.15.	Dimensions 400x250x190 mm	
5.16.	Weight*	8.5 kg

Biosan is committed to a continuous program of improvement and reserves the right to alter design and specifications of the equipment without additional notice.

* Accurate within $\pm 10\%$.

6. Maintenance

- 6.1. If the unit requires maintenance, disconnect the unit from the electric circuit and contact Biosan or your local Biosan representative.
- 6.2. All maintenance and repair operations must be performed only by qualified and specially trained personnel.
- 6.3. Standard ethanol (75%) or other cleaning agents recommended for cleaning of laboratory equipment can be used for cleaning and decontamination of the unit.
- 6.4. **Fuse replacement.** Disconnect from the power supply socket. Remove the power cable from the rear of the unit. Pull out the fuse drawer by applying leverage in recess (A). Remove the fuse from the holder. Check and replace with the correct fuse if necessary, 230V – M 630mA (type **M** - time lag: **Me**-dium).



7. Warranty and Claims

- 7.1. The Manufacturer guarantees the compliance of the unit with the requirements of Specifications, provided the Customer follows the operation, storage and transportation instructions.
- 7.2. The warranted service life of the unit from the date of its delivery to the Customer is 24 months (excluding the consumables, i.e. calibration kits). Contact your local distributor to check availability of extended warranty.
- 7.3. Warranty covers only the units transported in the original package.
- 7.4. If any manufacturing defects are discovered by the Customer, an unsatisfactory equipment claim shall be compiled, certified and sent to the local distributor address. Please visit www.biosan.lv, Technical support section to obtain the claim form.
- 7.5. The following information will be required in the event that warranty or post-warranty service comes necessary. Complete the table below and retain for your records.

Model	Automatic Luminescence Analyser ALA1/4
Serial number	
Date of sale	

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