

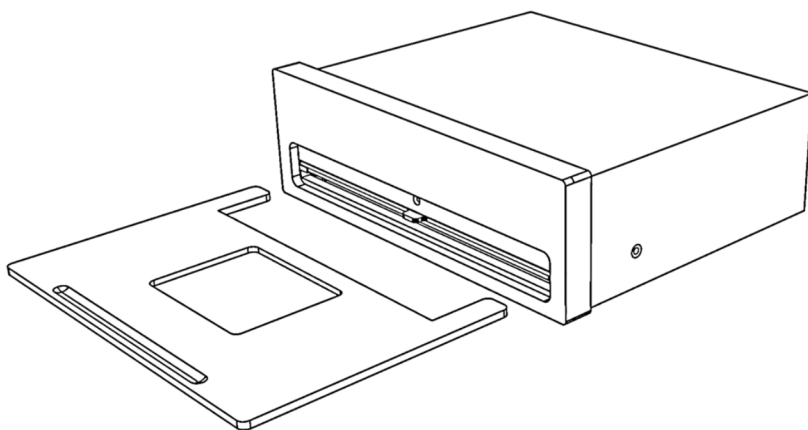
# INSTRUCTIONS FOR USE AND MAINTENANCE

## S-flow Reader



**Lateral Logic**

**Information Technologies Services**



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This user, assembly and maintenance manual  
is part of the study on harmonizing the device

**“S-flow Reader”**

with the European Directives,

**EMC 2014/30/EK, LVD 2014/35/EK**

This manual is an integral part of the **“S-flow Reader”** device and must be available to anyone who  
wants to operate, maintain, repair or adjust its operation.

Carefully keep this manual in an ideal place in the area where S-flow Reader will be placed and  
make it known to all stakeholders. In case of destruction or loss, request a copy from the manufactur-  
er or authorized representative.

The manufacturer is not responsible for any problems that will result from poor or faulty  
installation and repair of the device. Only trained authorized technicians are allowed to attempt repair  
of S-flow Reader” .



**Lateral Logic LTD**

which is the manufacturing company



In this manual, you may find some minor differences from the device you purchased.  
This is due to the constant evolution of our products. If this variation creates any  
question, feel free to contact the manufacturer directly.

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### 1. Introduction

#### General information



The manufacturing company "**Lateral Logic LTD**" since the beginning of its activities is committed to continuous improvement of :

- *the quality of the manufactured product,*
- *the simplicity of handling,*
- *the high performance of its machinery and, above all,*
- *safety*

"**Lateral Logic LTD**" was founded with the purpose of developing specialized software and equipment with application in the assessment of results of immunochemical analysis methods. The long experience of the company, the exclusive know-how, the high professionalism and the flexible production system are the key features that differentiate Lateral Logic LTD from the existing competition on both domestic and international markets. "**Lateral Logic LTD**", wishing to fully meet the needs of its customers, has focused on the following sectors:

Information and Communication Technologies	Software Services (Development, Marketing and Technical Support)
Manufacturing of specialized equipment	Commerce of electronics

This manual contains instructions for the use and maintenance of the S-flow Reader device from “Lateral Logic LTD”. Before installing and using S-flow Reader, read the following instructions carefully.

	<b>ATTENTION!!!</b> The company does not bear any liability for accidents or injuries due to negligence or failure to follow the instructions in this manual. It also has no responsibility for damage caused by inappropriate use of the device.
	<b>ATTENTION!!!</b> This manual is an integral part of the device and must always accompany it whenever it is moved or resold. It must be kept in a safe place, known to the responsible personnel. The staff is responsible for storing and preserving the manual intact so that it can consult it, throughout the lifespan of the device. In case of destruction or loss, a new copy must be promptly requested by the manufacturer.

For any repairs or controls requiring complicated procedures, you should contact an authorized service center with qualified personnel or directly “Lateral Logic LTD”, which is always at your service to provide you with prompt and diligent technical support.

Incorrect use of the instructions in this manual, malpractice, improper use of the device, and unauthorized modifications are grounds for canceling the warranty offered for the S-flow Reader device.

Careful reading of the data on the nameplate is mandatory to avoid errors that may endanger the integrity of the device and create a hazard.

We are confident that taking this into consideration, it will be easy to use S-flow Reader (Figure 1) to serve you in full compliance with your quality control requirements.



*figure 1*

## 2. Safety regulations and general instructions. General notes

When assembling and selecting the components of this device, everything has been done to make your work safer and more secure.

But caution is irreplaceable and there is no better rule than the one which prevents the accident.

“**S-flow Reader**” has been designed, built and assembled according to the **directives EMC 2014/30 / EK** and **LVD 2014/35 / EK** and based on the general standards:

**EN 60950-1:2006/A2:2013:** “*Information technology equipment- Safety- Part 1: General requirements*”

**EN 62471:2008:** “*Photobiological safety of lamps and lamp systems*”.

**EN 62479:2010:** “*Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)*”.





**EN 55032:2012 Class B:** “*Electromagnetic compatibility - Electromagnetic compatibility of multimedia equipment - Emission requirements*”.

**EN 55024:2010:** “*Information technology equipment - Immunity characteristics - Limits and methods of measurement*”.

**EN 61000-3-2:2014:** “*Electromagnetic compatibility (EMC)-part 3-2: Limits - Limits for harmonic current emissions (equipment input current  $\leq 16$  A per phase)*”.





**EN 61000-3-3:2013:** “*Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with*

## 3. Symbols used

	<b>This safety symbol is followed by a risk associated message that should be taken into account to avoid an accident.</b>
	<i>This symbol is followed by a message related to the information referenced herein or in an accompanying manual and should be taken into account. .</i>
	This symbol is followed by a hint.
	This symbol is followed by an advice.

## 4. Get to know the device


We recommend that you read this manual carefully before using the device for the first time. We have prepared it for you to use it properly and for your device to perform better. This manual contains information and tips for points that require special attention to help you make the most of your device.

	Carefully maintain this manual in an ideal location near the device and make it known to whom this may concern.
	Read carefully before proceeding with switching on, using, maintaining the device, and follow the instructions and warnings below.
	Keep the signs attached to the device and immediately replace those that have been lost or are unreadable.
	The device is used by responsible persons appropriately trained in its operation. A trained person is an adequately informed person or a person supervised by a qualified person so that they can avoid the dangers that the device may cause.

## 5. Designation

The word designation defines all indications or labels to identify the type of device or component fitted by the manufacturer of the device or component.

Each device has been manufactured having taken all the security measures to protect the operator. Nevertheless, there are remaining dangers that are highlighted on appropriate signs. These signs, shown below, highlight the various hazardous situations.

	Keep the signs clean and replace them immediately if they are loose or damaged.
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## **Manufacturer's logo & technical data**

The manufacturer's logo (figure 2) is clearly visible on the appliance and contains all details of the manufacturer and its technical characteristics.

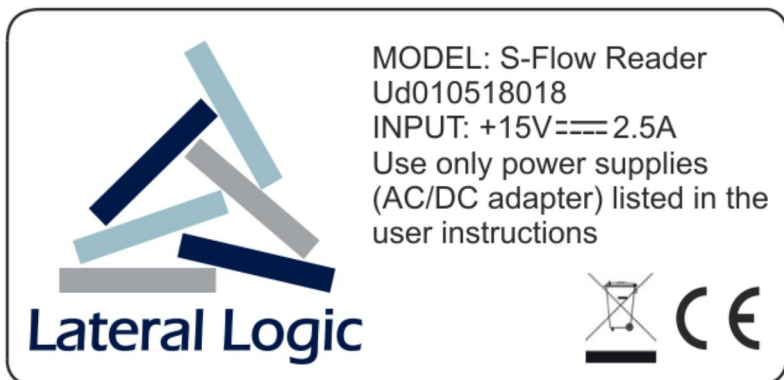
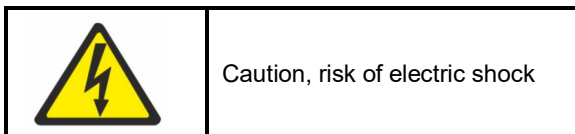


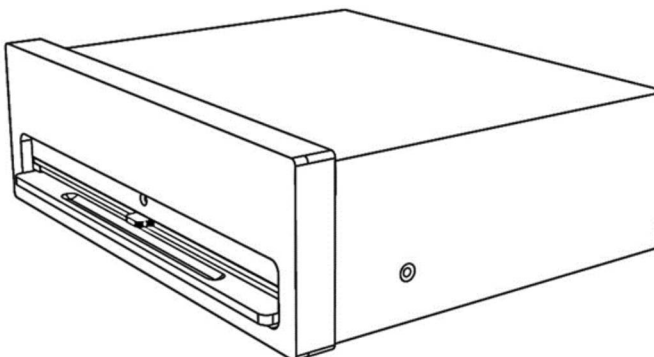
figure 2

## **Signs for marking of hazards**

Hazard signs are placed on prominent points on the S-flow Reader as well as on points presenting residual hazards which can not reasonably be excluded or severely restricted by the design stage, such as close to stressed parts.



Caution, risk of electric shock



## 7. Transport, installation and connection

### Transport

S-flow Reader is mounted in a package that includes the following in addition to the S-flow Reader:

- Power supply unit 220V with the European type plug.
- USB Stick with the necessary instructions for the installation and operation of the program.
- Small PAD-size computer with keyboard and mouse (*optional*)
- USB connection cable of the S-flow Reader to the computer.



**figure 3**

For safer transport the package includes expanded polystyrene blocks (styrofoam) to avoid displacement and wear of the device during transport (Figure 3).

	<p><b>WARNING !!!</b> When receiving the appliance, make sure that the transport packaging is closed and that there is no damage during transport.</p>
	<p><b>WARNING !!!</b> Upon receiving the device, open the packaging yourself and make sure it includes the internal stylized polystyrene.</p>
	<p><i>If you need to transport the S-flow Reader yourself, consult the section that mentions the packaging's technical characteristics (weight and external dimensions).</i></p>

## Assembling

The S-flow Reader is partially assembled. Upon reception, you should remove all parts from the inside of the shipping pack and assemble them.

The assembly process is simple and does not pose a risk to the user.

The assembly involves unlocking of the device, connecting the power adapter to the electrical supply and the S-flow Reader and connecting the S-flow Reader to the computer via the USB cable. Next, install the program on the computer.

## Unlocking the unit

Remove the banner with the “**REMOVE FIRST**” indication by first unscrewing the screw with the “**LOCKING SCREW**” label. This screw holds tightly the scanning head of the device in place during transportation. This should always be done before the device is put into operation or else there is a risk of damage.

The following table shows how to connect the transformer to the S-flow Reader and the power adapter and how to connect the S-flow Reader to the computer.

When it comes to the installation and operation of the program, a USB Stick is included inside the pack-

### TABLE OF ASSEMBLY



1. The following figure shows the power dapter that includes a type of power supply plug: IEC C6 ('clover') the appliance adapter, and the S-flow Reader USB connection cable.



2. Plug one end of the power cord into the power adapter and the other end into a 220V AC outlet.



## TABLE OF ASSEMBLY



3. Connect the small plug of the adapter cable to the S-Flow reader through the round hole on the back of the unit.



4. Insert one end of the USB cable into the port on the back of S-Flow reader and then insert the other end of the cable into a USB port on the computer.

5. To complete the process, you should follow the installation procedures of the software included with the USB STICK that you supplied with the device.






**WARNING !!! Do not modify or expand the power cord of the device. There is a risk of electric shock. If you need to extend or modify the power cord, you should contact the manufacturer or its authorized representative or use certified extensions (eg wire rod or power strip).**



## Mounting and installation

During mounting and installation follow the instructions below:

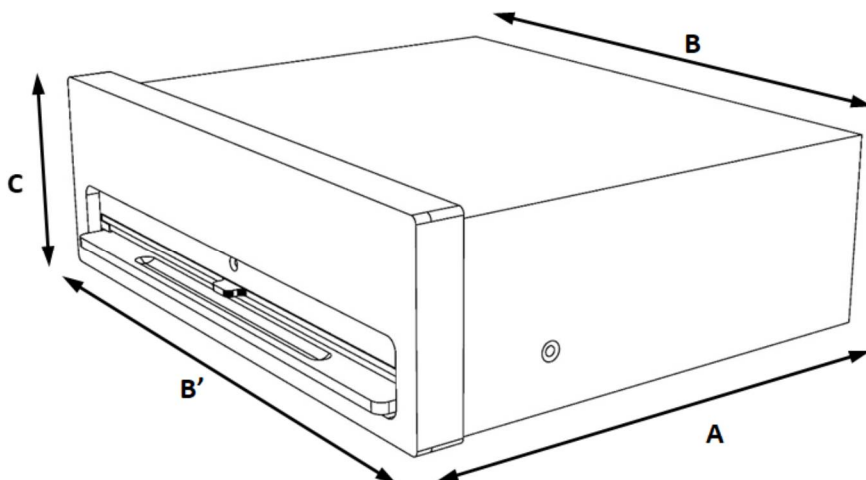
- Place the S-flow Reader on a flat surface. (The device has at the bottom of its base anti-skid pieces, to ensure the stability of the device).
- Install the S-Flow Reader near a power source so that the power cord of the device when connected to the power supply is not stretched.
- Place the S-flow Reader in a room where the temperature is as stable as possible without extreme temperatures.
- Before using the S-flow Reader for the first time, you must install the program on the computer that you were supplied with the S-flow Reader.

	<p><i>The S-flow Reader comes with all the necessary parts and instructions for its installation and operation.</i></p>
	<p><i>To disconnect the device, firmly hold the plug of the appliance's electrical cable and remove it from the power supply.</i></p>
	<p><b>CAUTION!!!</b> If the plug of the appliance cable is not removed from the power supply of the installation site by applying light pressure (sticking), please contact the manufacturer or a certified qualified electrician directly.</p>

## Maximum Dimensions

The maximum dimensions of the device are as follows:

S-flow Reader	
<i>Maximum length (A)</i>	<i>252 mm</i>
<i>Maximum leg width (B)</i>	<i>293 mm</i>
<i>Maximum facade width (B')</i>	<i>305 mm</i>
<i>Maximum height (C)</i>	<i>100 mm</i>



### Checks before each start

Before each start of the S-flow Reader, the user should perform specific checks to prevent malfunctions during operation. Checks should be done strictly before each start of the S-flow Reader.

In particular, the user should check:

- *The power cord of the power supply unit for possible damage.*
- *The S-flow Reader connection cable with the computer for possible damage.*
- *The protective glass for potential stains that will affect the analysis. (In this case, you should follow the cleaning instructions included in this instruction manual and maintenance manual).*
- *The proper placement the lateral flow test on the scanning area.*



**ATTENTION!!! Do not place the lateral flow test outside the scanning area.**

## 7. Operating Principle

The S-flow Reader has a digital imaging machine with an optical scanning head. The machine frame is made of 8mm thick acrylic material with precision processing on CNC machines. The facade of the 305x97x24mm machine is made of white homogeneous corian white hue and is also manufactured in CNC precision machines. The device is surrounded by a metal shell made of 1mm round steel sheet with electrostatic paint finish in black RAL 9005 gray RAL color.

The S-flow Reader is used to extract quantitative or semi-quantitative results from the analysis of lateral flow-type immunodiagnosics. This is accomplished by digital processing of the images that are scanned on the S-Flow reader and sent via USB protocol connection to a computer or other equivalent processing device on which the appropriate analysis software is installed.

## Version 2

Diagnostics are placed in the open position in the appropriate orientation on the non-slip surface of the moving drawer. Then, when you close the drawer, it is inserted into the machine and you start the image capture process from the software. The captured image is processed by the software from which the analysis results are obtained after a few seconds. This procedure is repeated at will and according to the number of diagnostic to be analyzed.

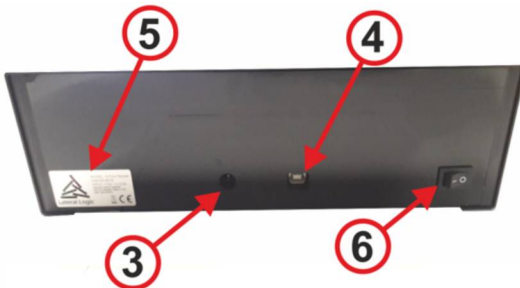
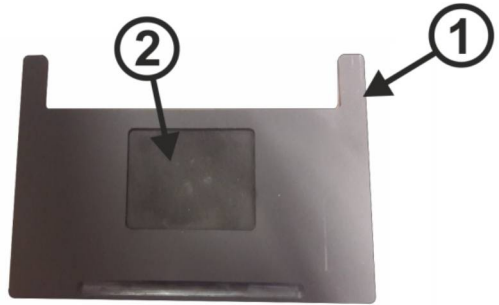
### Machine description

Inside the machine includes a 15V low power motor, a magnetic contact, a timing belt, a visual head, an electronic board, an LED indicator, a 2-position switch, wiring material for the necessary connections, two black matte acrylic scissors, a glass optic head adjusting surface, a 3mm glass acrylic glass tray for feeding the sampling tapes for visualization.

All components are secured with black M2 and M3 machine bolts in brass inserts M2 and M3 respectively. The machine has two basic detachable parts.

The first is the protective glass of the machine and the second is the black (5mm) black matte acrylic material (1) with a black non-slip sponge (2).

The second component is the drawer where the sample strips are placed defining the scanning area with the black matte anti-slip sponge.




At the back of the S-flow Reader are the recesses for connection to the power supply (3) and the computer (4), the manufacturer's label (5) and the S-flow Reader (on-off) (6).

## 10. General operating instructions

### *During connection and operation*

To start up and put the device into operation, follow the instructions given in Chapter 6, Section 6.2. Once the tests have been carried out to start the S-flow Reader and prepare it for the scanning process, you must initially connect the power plug to the power supply of the installation area and connect it via the USB cable to the computer. For more effective scanning, follow these tips:

	Always use a genuine lateral flow test.
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Below is the S-flow Reader mode of operation according to the manufacturer:

## INSTRUCTIONS



Initially, you need to turn on the S-flow Reader. For the above procedure, you should lightly press the power switch on the back of the S-flow Reader.



2. Then pull the S-flow Reader plate.



3. Place the lateral flow test on the pad on the plate.





4. Press lightly on the plate until it returns to its original position.  
5. Run the software on the computer.


**During shutdown & de-energizing of the appliance:**

Apply a slight pressure on the power switch on the back of the S-Flow Reader.


Remove the electrical cable from the power supply of the installation area.

	Turn off the S-flow Reader by exerting a slight pressure on the switch on the back of the S-Flow Reader if the power failure is due to a network fault.
	Connect the S-flow Reader to a Uninterruptible Power Supply (UPS) to ensure proper operation in the event of power failure and voltage fluctuation.

If the interruption is due to a deliberate interruption of the S-flow Reader, make sure the disc is empty and clean it so that there are no leftovers from previous checks.

	<b>ATTENTION!!! The connection as well as the disconnection of the S-flow reader should be carried out in the order and instructions as presented in this instruction and maintenance manual.</b>
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## 9. Maintenance & cleaning

	<b>ATTENTION!!! Before performing any cleaning action on the appliance, turn off the power switch and make sure that the S-flow Reader is disconnected from the power supply in accordance with the instructions in this operating and maintenance manual.</b>
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The various periodic maintenance functions are listed below. Systematic and periodic maintenance and cleaning ensure, among other things, low operating costs and longevity of the device and avoiding residue in the S-flow Reader disc.


To ensure optimal performance of the S-Flow reader and stain-free image capture of the lateral flow tests, it is important to clean the surface of the protective glass on a regular basis

### **Removing and cleaning of the glass :**

Use a medium standard Philips screwdriver to remove the two black screws on the left and right side of the unit.



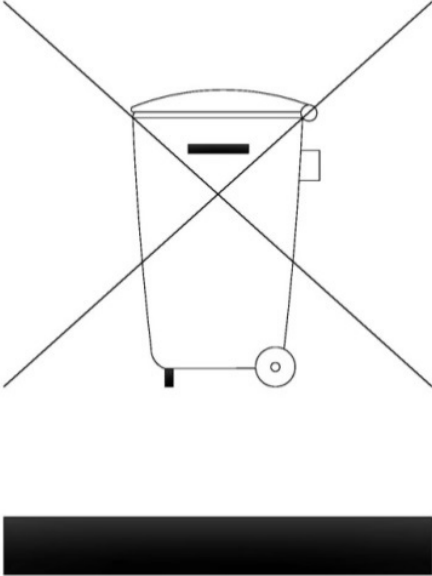
Remove the plate and find the small handle on the front of the glass frame. Let it slide out by applying light pulling force. Clean the glass surface with a soft, non-abrasive cloth. If needed, use a small volume of screen cleaning fluid or other very mild and diluted detergent to help remove stubborn spots or stains.

Ensure that the glass has dried and is free of dust and dirt and then follow the reverse procedure to set the frame in the initial position

	<b>ATTENTION!!! Never use brushes, abrasive products, strong alkaline solvents, flammable or toxic liquid cleaners on any surface.</b>
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The required maintenance of the device is related to the following tasks:


**Checking the plug and the power cord:** Check for possible damage. If the S-flow reader plug or electrical cable exhibits wear or extreme temperatures, you should contact the manufacturer or an authorized representative.



	<p>Spare parts must meet the requirements specified by the manufacturer. Only use original spare parts.</p>
	<p>The appliance should not be disposed of with other household waste after the end of its life cycle. In order to avoid possible harmful effects on the environment or health due to the uncontrolled disposal of waste, please separate it from other types of waste and recycle it to help in the sustainable reuse of material resources. Users should contact either the seller from where they purchased the device or the local service to find out the details of where and how they can give this device for environmentally safe recycling. <u>This appliance should NOT be mixed with other conventional waste for disposal.</u></p>
	

## 10. Security measures

User security is one of the most basic concerns of the device manufacturer. When designing the device, designers try to predict all possible hazardous situations and of course to adopt the necessary safety measures. This is why it is suggested to carefully read this manual and, above all, safety measures, paying special attention to those functions that are dangerous.

The S-flow Reader in its intended operation by the manufacturer does not present any hazard to the user. However, the user should follow the instructions below:

	<p><b>ATTENTION!!! Never maintain the S-flow Reader if you are not sure to have turn it off and disconnected from the power supply.</b></p>
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	<b>ATTENTION!!!</b> Never clean the S-flow Reader if you have not turned it off and if you have not removed it from the power supply.
	The S-flow Reader is designed to meet all the requirements for safe operation.

***For the safe operation of the S-flow Reader, please note the following:***

- *Do not make any modifications or changes to the S-flow Reader.*
- *Replace any label that is missing or is illegible on the device.*
- *Follow the instructions for use and maintenance.*
- *Any interference with the S-flow Reader that is not made by the manufacturer must be done by a qualified adult person and after the device has been turned off.*

## **11. Malfunctions and how to troubleshoot**

This section describes some possible malfunctions and how to deal with them. In case of a problem other than those listed below contact the manufacturer or the supplier.

In the context of the continuous improvement of service provision and ongoing cooperation with our customers, we would be pleased to contact us also in the event of a problem other than that listed in the following table.

#	<i>Problem</i>	<i>Possible cause</i>	<i>Tackle</i>
1	The S-flow Reader does not work.	The S-flow Reader is not connected to the power supply.	Check the S-flow Reader's electrical cable and make sure the plug is located in the socket of the installation site.
2	No scan is performed.	Computer program malfunction.	Contact the manufacturer or his authorized representative for program control.
		The presence of scraps on the S-flow Reader disc.	Clean the S-flow Reader disc.