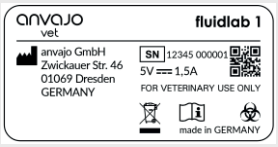
Registered Trademarks
All hardware and software names specified in this manual are registered trademarks or should be regarded as such. The proper names of products and software are shown in **bold**.

Errors
Great care has been taken in compiling the text and figures in this manual. Nonetheless, the possibility of errors cannot be fully excluded. The company accepts no legal responsibility or liability of any kind for incorrect information and the consequences thereof. The company is always grateful for any suggestions for improvement and notifications of errors.

1 Contents

2 Safety Instructions/Hazard Analysis

2.1 Symbols Used in the User Manual and on the Device

Symbol	Meaning
	Warning! Please observe the warnings and precautions in this manual to ensure the product is used safely
	Follow the instructions for use.
	Temperature restrictions/permissible temperature range/temperature limits for storage and transport
	Serial number
	Manufacturer
	USB port
	Standby switch
	Waste symbol; the black bar indicates a key date regulation (cf. 2012/19/EU)
	Direct current
	Biological Risks
	Type plate with device-specific information, such as serial number, manufacturer, and system name

2.2 General Safety Instructions

Warning!
The system is designed for use in veterinary urine diagnostics. The applicable safety regulations must be observed.

Warning!
Before using the system, please read the user manual and observe all safety instructions. Each user must be made aware of this user manual before using the system; the user manual must be kept close at hand at all times. The user manual is not, however, able to represent all possible dangers.

Each user is responsible for complying with the safety and health regulations applicable to the respective local jurisdiction and determining and observing any restrictions before using the device. These restrictions include avoiding the use of hazardous substances.

Please notify the service department if any malfunctions, faults or damage to the system are observed during operation.

Warning!
To avoid the risk of electric shock, the system must be operated in its original condition, closed on all sides.

The system must be operated within the nominal operating range specified in Chapter 8.1.

Warning!
Use only original parts, or parts recommended by the manufacturer, to avoid damage to the system and to ensure it functions safely.

Warning!
If the device is opened, the manufacturer shall not be liable for the device or for any damage caused thereby. The warranty provisions are set out in Chapter 7.4.

The system must be protected from damp and moisture (for protection rating, see Chapter 8.1). Care must be taken not to spill any liquid over the system or insert any objects through openings.

You must not repair the system yourself. In the event of a defect, please inform the service department of anvajo GmbH (Chapter 7.7).

Do not use sharp or pointed objects to operate the touch screen.

We recommend the use of gloves when working with the device in order to avoid contamination by direct contact with any infectious samples or sample residues.

All quality controls and cleaning specified in the accompanying documents must be carried out to ensure the system is functioning correctly.

In the event of any changes to the system, it is necessary to verify compliance with the requirements of standard IEC 61010-1.

Warning!
An LED is used during fluid measurements/reference measurements. Avoid looking directly into the active LED, as this may damage the retina.

Known contraindications:
no incompatibilities known in the use of the device

2.3 Electromagnetic Considerations

The system is intended for use in an industrial electromagnetic environment.

Do not operate the system in the immediate vicinity of other devices or with other devices in stacks, as this could result in incorrect functioning.

The use of accessories or cables other than those specified by the manufacturer may lead to increased electromagnetic interference or reduced electromagnetic immunity of the system and could result in incorrect functioning.

Portable RF communication devices (mobile phones, radios) should not be used at a distance of less than 30 cm from the system. Failure to observe this instruction may lead to a reduction in performance.

The system has been tested in accordance with EN 61326-1 and ETSI EN 301 489-17. The system is not known to cause any interference. Despite testing, a deterioration in EMC behaviour (transmission and reception) may occur, e.g., as a result of the aging or failure of assemblies. In such cases, the system must be checked at the manufacturer's premises.

Unforeseen interference from the system may occur if the level of interference exceeds the levels required by IEC 61326-1 and ETSI EN 301 489-17. This may occur as a result of the choice of installation site, e.g. amplification of existing sources of interference. In this event, the operator should position the system in such a way as to minimize any interference.

The system has been tested in accordance with EN 62311 and EN 62479. The system is not known to expose the user to any electromagnetic radiation above the level of the basic restrictions for general public exposure specified by these standards.

2.4 Lithium Polymer Battery

The system is equipped with a lithium polymer battery, which has been tested in accordance with IEC 62133. Improper use of the battery may lead to a reduction in

battery life. To avoid irreversible capacity losses, please observe the following principles:

The optimum temperature range is 10°C to 25°C.

Warning!
Only charge the battery in the specified nominal operating range (see Chapter 8)! Failure to observe this instruction may result in permanent damage to the battery.

Avoid fully discharging the battery. A lower charge cycle depth (starting the charging process before a 100% discharge) will increase the battery's service life.

Note: *Lithium batteries do not exhibit a memory effect.*

If storage should be necessary, aim for a remaining battery capacity of 30% to 40%. Temperatures should be below room temperature (approx. 20°C). To avoid excessive discharge, the battery should be charged to at least 40% once every six months.

The battery should only be replaced by the anvajo GmbH (Chapter 7.7).

Warning!
Return the battery in a discharged state (see Chapter 7.9).

Warning!
Many chargers consume power while they are plugged in the socket – even if they are not charging. Disconnect the charger from the mains after charging.

2.5 Radio Communications

The system has been tested in accordance with ETSI EN 300 328. The user should only connect the device to trusted wireless networks (WLAN) that are protected from unauthorised access over the Internet, through the use of firewalls. Always make sure that the data is shared and received only with devices that are trusted and properly secured.

Obstacles (e.g., walls, fences, grates) located between the device and the devices to which it is connected (e.g., WLAN routers, computers with WLAN) may reduce the maximum range of the WLAN connection. Furthermore, in such cases a decrease in the data transfer rate may be expected.

anvajo GmbH is not responsible for the loss, interception or misuse of data sent or received when using the device's wireless communication methods.

3 Introduction

3.1 A Brief Description and Intended Purpose

The **fluidlab 1** is a mobile analyser developed for the quick, easy, and cost-effective microscopic analysis of urine in veterinary medicine. The **fluidlab 1** is operated and controlled via an intuitive touch screen.

Prior to the measurement, samples of the urine must first be pipetted into the **Urine Sediment** sample carrier. The filled sample carrier is then inserted into the **fluidlab 1** for measurement. The measurement procedure, the configuration of parameters and the evaluation of the measurement results are described in Chapter 6.2.

Product features at a glance:

- Microscope (for performance data see Chapter 8.1)
- Touch screen (for performance data see Chapter 8.1)
- Mains or battery operation possible (for performance data see Chapter 8.1)
- WLAN connection (WLAN as client or hotspot)
- Display of measured value, evaluation via touch screen
- Communications interface to PC software

Output parameters (in factory configuration):

- Erythrocytes
- Leukocytes
- Epithelial cells (squamous cells, non-squamous cells)
- Crystals (struvite, calcium oxalate dihydrate, unclassified crystals)
- Casts (hyaline casts, non-hyaline cast)
- Suspicion of bacteria

Main advantages of the fluidlab 1:

- Quick identification and display of quantitative test results
- Portable, battery-operated system
- Simple, user-friendly operation

3.2 Overview

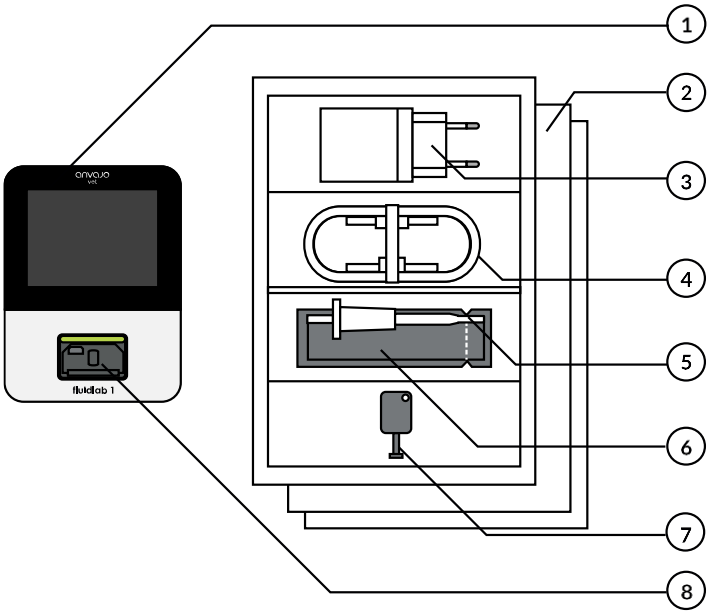
The **fluidlab 1** makes it possible to take optical measurements of urine samples, which are placed in special sample containers and inserted into the system. The system has a microscope that records images of the urine sample.

The recorded images contain optical signals from the objects contained in the urine sample (e.g., cells). These are analysed using mathematical image processing methods and output as the test result.

A further optical sensor in the device identifies the **Urine Veterinary** sample carrier by reading a code.

3.3 Product Set Components

Figure 1



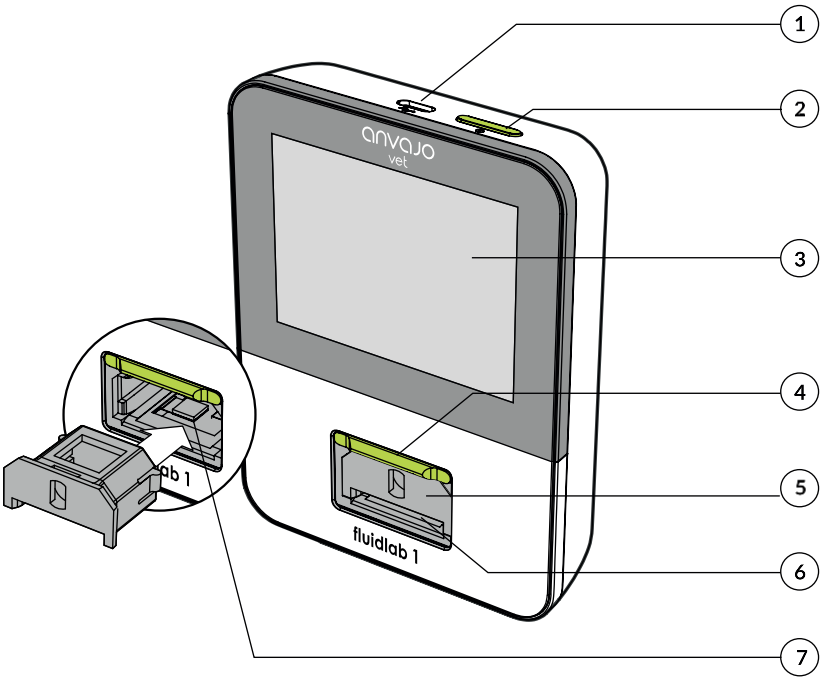
No.	Name	Part number	Description
	Set fluidlab 1	10153	consisting of:
1	**fluidlab 1**	10152	
2	Technical documentation		User manual Quick Start Guide Dilution Guide
3	USB battery charger	10048	See Chapter 8.2
4	USB-C cable	10049	See Chapter 8.2
5	Standard pipette	10093	Pipette with a capacity of 20 µl
6	Cleaning swabs	10068	Set of 12, see Chapter 7.5.3
7	Adapter key	10042	Tool for changing the adapter
8	Adapter	10039	Sample carrier adapter 01: **Urine Veterinary** (inserted in the measuring device)

Note: *Please check that the product set is complete, based on the delivery note. Only products and accessories that are completely free of defects should be put into operation. Any damage must be reported to the supplier immediately.*

Note: *Please note the full part number as specified on the delivery note for your orders!*

3.4 Description of Device

Figure 2



No.	Name	Function
1	USB port	Power supply, charging the battery (see Chapter 4.2)
2	Power on/off button	Switch device on and off (see Chapters 4.3 and 4.4)
3	Touch screen	Operation of the graphical user interface, display of results
4	Slider	Cover of the measuring chamber to protect against contamination of the sensor
5	Sample carrier adapter	Adapter for sample carrier; can be removed for cleaning of sensor/measuring chamber (see Chapter 7.5.3)
6	Sample carrier opening	Area in which sample carrier is inserted (see Chapter 6.2)
7	Measuring chamber with sensor	Area in which sample carrier adapter is inserted.

4 Setup and Use

Note: *If used as a portable device, the **fluidlab 1** must be held in one hand and operated with the other free hand. If it is being used as a desktop device or when it is being charged, it should be placed on a stable, level, secure surface to prevent it from falling over and being damaged.*

Warning!
During the analysis, the device should be kept still. It is recommended to place the device stationary on a stable surface.

4.1 Initial Setup

Note: *On delivery, the **fluidlab 1** is in shipping mode. In order to start up your **fluidlab 1** for the first time, please connect it to the supplied USB charger using the supplied USB cable before switching it on for the first time.*

1. Remove the protective film from the device's display by holding the small tab and carefully pulling it off downwards over the display.
2. Connect the device to the supplied USB charger, the USB cable, and a mains socket – the same procedure as when charging the battery (see Chapter 4.2).
3. The power on/off button (Figure 2-2) lights up briefly. The device is no longer in shipping mode and can be switched on (see Chapter 4.3).

4.2 Charging the Built-in Battery

Warning!
Throughout the charging period, the **fluidlab 1** must be placed on a stable, level, secure, fire-resistant surface. The charging process may cause the bottom of the device to heat up.

Warning!
The device may only be charged and operated using the supplied power supply unit described in the specifications (Chapter 8.2). If the power supply unit fails, a replacement power supply unit should be requested from the manufacturer.

Warning!
Only charge the battery in the specified nominal operating range (see Chapter 8.1)! Failure to observe this instruction may result in permanent damage to the battery.

1. Place the **fluidlab 1** on a stable, level, secure, fire-resistant surface.
2. Plug the supplied USB charger (Figure 1–3) into a mains socket.
3. Plug the larger of the two connectors on the USB cable (Figure 1–4) into the USB port on the USB charger.

4. Plug the other end of the USB cable into the USB port on the **fluidlab 1** (Figure 2-1).
5. The charging process is active when the power on/off button (Figure 2-2) on the **fluidlab 1** lights up at regular intervals.
6. The battery is fully charged when the power on/off button stops lighting up at regular intervals or when the battery icon on the display is full.
7. Disconnect the USB charger from the device when the battery is fully charged. First unplug the connector on the USB cable from the device before unplugging the power supply unit from the mains socket.

Note: *The* **fluidlab 1** *can be switched on and used for measurements during the charging process. It is not necessary to wait until the battery is fully charged to switch the device on.*

4.3 Switching On the Device

Note: *In order to be able to switch on the* **fluidlab 1,** *either the device battery must be charged (partially or fully) or the USB charger must be connected to the device with the USB cable (see Chapter 4.2).*

1. Switch the unit on by pressing and holding down the power on/off button (Figure 2-2) for approx. one second and then releasing it. The device is switched on when the power on/off button lights up.
2. Wait until the system has started. This process takes approx. 40 seconds. The start-up is complete when the main user interface (see Figure 4) appears on the display. The device is now ready for operation.

4.4 Switching Off the Device

Note: *There are several possible ways of switching off the* **fluidlab 1**. *For fault-free operation of the* **fluidlab 1**, *you should use a "normal shutdown" whenever possible. If a "normal shutdown" is not possible (e.g., as a result of a non-responsive system), please select "error shutdown".*

Normal shutdown (recommended):

1. Press and hold down the power on/off button (Figure 2-2) on the **fluidlab 1** for approx. one second until a selection menu ("Shut down the device – Yes/No") appears on the display. Then immediately release the power on/off button.
2. Tap "Yes" to switch off the device. If you tap "No", the process is cancelled, and the device will remain switched on. The device is switched off when the power on/off button is no longer illuminated.

Error shutdown:

Warning!
Only perform this procedure if a “normal shutdown” (see above) is not possible.

1. Press and hold down the power on/off button (Figure 2-2) on the **fluidlab 1** for approx. 8 seconds until the LED starts flashing at a higher frequency. Then immediately release the power on/off button. The device is switched off when the power on/off button is no longer illuminated.
2. This will switch the device off immediately. Under certain circumstances, this may result in data loss of the most recent measurements.

4.5 Exiting Energy-saving Mode

Note: *The* **fluidlab 1** *has a built-in energy-saving function which, after a predefined period of inactivity, first reduces the brightness of the display and then switches off the display backlight (energy-saving mode). Apart from the display of the graphical user interface, the device is fully functional in this mode.*

Energy-saving mode:

- Automatically activated after approx. 2 minutes of non-use
- Display is dimmed for a brief period and then switched off
- Power on/off button (Figure 2-2) lights up cyclically (“breathing”)

To “wake up” the **fluidlab 1** from power-saving mode and return it to the active state, proceed as follows:

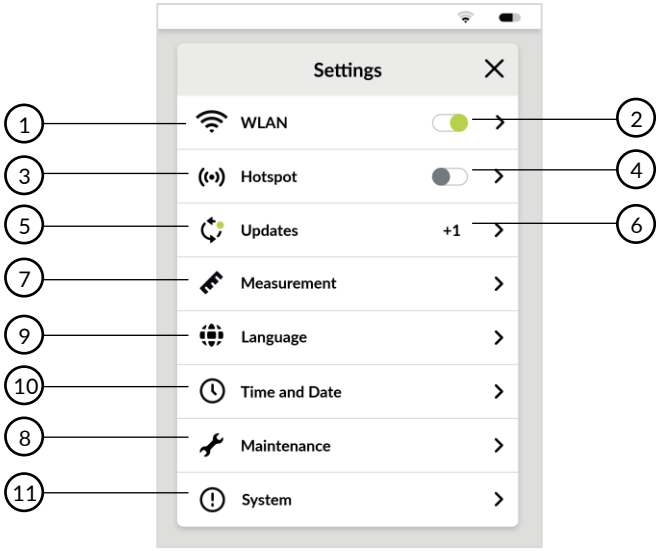
1. Tap on the touch screen.
2. As soon as the display surface lights up on the touch screen, the system has left energy-saving mode and is back in operating mode.

5 Setting Up the System

5.1 Settings Menu

The settings menu can be called up at any point on the **fluidlab 1** by tapping the settings icon (⚙). The **fluidlab 1** is supplied pre-configured. Hence, configuration of the settings is not necessary, although it may be useful.

Figure 3



You can use the following functions from the Settings menu:

No.	Name	Function
1	WLAN button	Show WLAN settings (see Chapter 5.2)
2	WLAN switch	Enable/disable WLAN (see Chapter 5.2)
3	Hotspot button	Show hotspot menu (see Chapter 5.2)
4	Hotspot switch	Enable/disable hotspot (see Chapter 5.2)
5	Update button	Show Update menu (see Chapter 5.3)
6	Update indicator	Signals an available software update (see Chapter 5.3)
7	Measurements	Setting reporting units and ranges
8	Maintenance	Sensor status and Refresh (see Chapter 6.8)
9	Language	Show Language settings menu (see Chapter 5.6)

No.	Name	Function
10	Time / Date	Show the Time / Date settings menu
11	System	Show system information (see Chapter 5.8)

5.2 Configuration of the WLAN Adapter

5.2.1 Description of Operating Modes

Note: *Setting up the WLAN adapter is not necessary for the basic, standalone use of the* **fluidlab 1**. *However, full configuration of the WLAN adapter is recommended if you wish to benefit from Software updates on the* ***fluidlab 1***.

The **fluidlab 1** has a built-in WLAN adapter, which can be operated in different modes that enable various functions.

In the configuration, you can choose between the following modes:

A) **WLAN mode:** Connect your **fluidlab 1** to an existing wireless network (WLAN) in order to establish connections, e.g., to your PC, laptop or a server. If the WLAN has Internet access, extended functions (e.g., software updates) are available to you (see Chapter 5.2.2).

B) **Hotspot mode:** Allow your **fluidlab 1** to create a device-specific wireless network (WLAN) that other devices (such as your PC or laptop) can access and use to establish connections to the **fluidlab 1** (see Chapter 5.2.3).

C) **Offline mode:** In this mode, the WLAN adapter of your **fluidlab 1** is switched off. WLAN and hotspot are disabled. As a result, wireless communication with other PCs or update servers is not possible (see Chapter 5.2.4).

Note: *If you are using the* **fluidlab 1** *to access a WLAN with an Internet connection, you can receive and install software updates directly on your* **fluidlab 1**.

Note: *Obstacles such as walls, glass windows, machines and liquid containers that are located between the* **fluidlab 1** *and the connected WLAN access point (e.g., router) or a network device connected in hotspot mode may affect the quality of the WLAN connection, reduce the data transfer rate and result in dropped connections.*

Note: *Connectivity problems may also occur:*

a) If you attach metallic stickers near the device's antenna

b) If you attach a metal cover to the device

c) If the device's antenna is covered by your hands or other objects during mobile data transmission

5.2.2 WLAN Mode

The following section describes how to connect your **fluidlab 1** to an existing WLAN.

1. Open the settings menu of the **fluidlab 1** by tapping the settings icon (⚙).
2. Tap on the switch to the right of "WLAN". When the switch turns green, WLAN mode is enabled. (This will disable hotspot mode if it had been previously enabled.) A greyed-out WLAN icon ( ) will appear in the menu bar.
3. Tap on the word "WLAN" to open the WLAN settings.
4. The device will now search for available WLAN networks and, when the search is complete, will list the names (SSID) of the networks it has found on the display.
5. Tap on the name of the WLAN to which you wish to connect your device.
6. If necessary, enter the password for accessing the WLAN network and confirm your entry by tapping on the confirmation button ( ).
7. Your device has successfully connected to the WLAN if the WLAN icon ( ) on the menu bar shows the signal strength.

Note: *Not all WLAN networks allow new devices to be added without prior registration of the device by the network administrator (e.g., networks with MAC address or port filtering). In order to establish connections to the client software, the **fluidlab 1** requires the use of port 8080. In order to obtain online software updates for the device (recommended), the **fluidlab 1** requires Internet access to port 443 (https).*

5.2.3 Hotspot Mode

The following section describes how to create a WLAN Network (hotspot) using **Fluidlab 1**. You can then add other WLAN-enabled devices to this WLAN network so that they can communicate with your **fluidlab 1**.

1. Open the settings menu of the **fluidlab 1** by tapping the settings icon (⚙).
2. Tap the switch to the right of "Hotspot". When the switch turns green, hotspot mode is enabled. (This will disable WLAN mode if it had been previously enabled.)
3. Tap on the word "Hotspot".
4. The display will show the data with which your other WLAN-enabled devices, e.g., PC or laptop, can access the WLAN hotspot generated by the **fluidlab 1**:

Network name:	*fluidlab1vet_######* ***Note**: ###### = 6-digits n°*
Default password:	*fluidlab1vet*
IP address:	192.168.#.#

5. Hotspot mode has been successfully enabled if the hotspot icon ( ) appears on the menu bar.

You can now access the WLAN hotspot that has just been created with other WLAN-enabled devices (PC, laptop) using the data shown above.

Note: *The necessary steps for connecting a PC or laptop to the* **fluidlab 1***'s WLAN hotspot may be found in the manual for the product in question (keyword "Connecting to WLAN networks").*

5.2.4 Offline Mode

The following section describes how you can disable the **fluidlab 1** WLAN adapter if the WLAN or hotspot function has been enabled.

1. Open the settings menu of the **fluidlab 1** by tapping the settings icon (⚙).
2. Tap on the switch to the right of "WLAN" so that it is greyed out. When the switch is greyed out, WLAN mode is disabled.
3. Tap on the switch to the right of "Hotspot" so that it is greyed out. When the switch is greyed out, hotspot mode is disabled.
4. Both WLAN and hotspot modes are now disabled. As a result, your device is in offline mode.

5.3 Software Update

Software updates can be provided for the **fluidlab 1** by the manufacturer. They are made available on the *manufacturer's update server*. As part of the updates:

- Security features are updated
- Known software bugs are removed
- Performance improvements are implemented
- Operating concepts are optimised

Software update checks for **fluidlab 1** are performed automatically if Wi-Fi is configured and internet connection is available (see Chapter 5.2.2). Furthermore, the user can manually perform an update check, as described below.

Updates always require the consent of the user. Please contact our Sales department about the provision of paid content.

Note: *In order to receive software updates for the device, it is necessary for the* ***fluidlab 1*** *to be connected to a WLAN and be authorised to access the Internet. If in any doubt, please consult a network administrator in order to permit Internet access for the* ***fluidlab 1.***

Warning!
For the installation of the update, the battery level must be at least 50 %. Otherwise, the installation will be aborted for safety reasons.

Update:
Updates are only possible if the device is configured in WLAN mode and integrated within a WLAN with Internet access (see Chapter 5.2.2):

1. Open the settings menu of the **fluidlab 1** by tapping the settings icon (⚙) once.
2. Tap on the menu item “Updates”.
3. Tap on the “Check for update” button if this is present. If it is not present, skip this step.
4. Tap on “Install update”.
5. The updates will now be transmitted to the **fluidlab 1**. This process may take several minutes.
6. The updates will be installed; this process may take several minutes.
7. The installation is complete once the system has automatically restarted.

Note: *If the* **fluidlab 1** *is connected to a WLAN with Internet access, the system will regularly and automatically check for any software updates. The* **fluidlab 1** *notifies you that an update is available with a green dot on the* settings icon (⚙) *and the update icon (* ⟳ *).*

Note: *If a new software update is available, a message window will appear within the update menu in the bottom right-hand edge of the screen with the appropriate text.*

5.4 Measurements

5.4.1 Units

Fluidlab 1 provides users with a flexibility to select desired reporting units.

There are three options:

- SI Units (N/µL)
  - All parameters are reported as a number of elements per µL of urine sample

- Microscopy (N/HPF, N/LPF)
  - All parameters are reported as a number of elements per HPF (High Power Field) or LPF (Low Power Field)

Setting the units:

1. Open the settings menu of the **fluidlab 1** by tapping the settings icon (⚙).
2. Tap on the menu item “Measurements”.
3. Tap on the “Units”
4. Select desired reporting units.
5. If selecting „Custom Units “, **scroll down** and select specific units for individual parameters.

Note: *Units in results history and decision limits are always displayed according to current unit setup.*

5.4.2 Decision Limits

Decision limits menu provides the user with an ability to customize the reporting concentration ranges for each parameter according to their individual needs or the regionally specific recommendations.

	Decision Limits				
	Negative	**Low**	**Medium**	**High**	**Very High**
RBC	0 – 5/HPF	5 – 25/HPF	25 – 100/HPF	>100/HPF	
WBC	0 – 3/HPF	3 – 6/HPF	6 – 20 /HPF	20 – 50/HPF	>50/HPF
EC	0 – 1/HPF	1 – 5/HPF	5 – 10/HPF	10 – 20/HPF	>20/HPF
CRY	0 – 1/HPF	1 – 6/HPF	6 – 21/HPF	21 – 50/HPF	>50/HPF
	Negative		**Present**		
CAS	0/LPF		>1/LPF		

(1) Labordiagnostik in der Kleintierpraxis, Michael D. Willard, Harold Tvedten, Urban & Fischer Verlag 2004

(2) Ernst und Judith Leidinger, Invitro Diagnostic Lab, Vienna, Austria „Components of urine sediment "

Setting the Decision Limits:

1. Open the settings menu of the **fluidlab 1** by tapping the settings icon (⚙) once.
2. Tap on the menu item "Measurements".
3. Tap on the "Decision Limits"
4. Tap on the selected parameter.
5. Tap on the lower/upper value of the given range.
6. Enter appropriate value and confirm by tapping on the confirmation button (✓).

Note: *Units in results history and decision limits are always displayed according to current unit setup.*

5.5 Maintenance

Various fluidlab 1 sensors require regular checks. For detailed information see Chapter 6.8.

5.6 Language Settings

The text on the **fluidlab 1**'s graphical user interface can be displayed in various languages. The following languages are installed and can be selected when the device is delivered:

- English (default setting on delivery)
- German
- French
- Spanish
- Italian
- Russian
- Chinese

It is possible to set a different display language as follows:

1. Open the settings menu of the **fluidlab 1** by tapping the settings icon (⚙).
2. Tap on the menu item “Language”.
3. Select the desired display language by tapping on the relevant name. The new setting will be applied, and the display will change straightaway.

5.7 Time and Date Settings

It is important that fluidlab 1 has the correct time and date. If fluidlab 1 has access to Wi-Fi, the time and date is set automatically using details provided by your network to adjust the date and time. Thus, the device can automatically change the settings to match the time and date of any country without a need of any further manual intervention. If not, the date and time have to be set manually including a time zone.

You can change the time and date on your device as follows:

1. Open the settings menu of the fluidlab 1 by tapping the settings icon (⚙).
2. Tap on the menu item “Time / Date”.
3. Automatic time and date settings are allowed by default.
   If not provided or denied:
   3.1. Select a respective time zone.
   3.2. Set a local time and date.
4. Select time format.

Note: *Ensure that the time and date are set correctly before start using the device.*

5.8 Displaying System Information

You can display the system information for your device as follows:

5. Open the settings menu of the **fluidlab 1** by tapping the settings icon (⚙).
6. Tap on the menu item “System”.
7. The system information will be displayed.

The system information includes the following details:

- The model name (“Device”)
- The serial number of the device (“Serial number”)
- The currently installed software version
- The MAC address of the WLAN adapter
- The hostname

Within the system information, the user can allow the manufacturer (anvajo GmbH) to access data (Share Data automatically).

6 Carrying Out Measurements

6.1 Preliminary Remarks

Warning!
Read this user manual before carrying out the first measurements. Please feel free to contact our support department if you have any questions.

Note: *If the* **fluidlab 1** *or the sample carriers have been stored at an ambient temperature ≤ 5°C, they must be unpacked and allowed to adjust to room temperature before measurements are carried out.*

Warning!
The **fluidlab 1** is only suitable for use with the **Urine Veterinary** sample carrier and the appropriate sample carrier adapter.
For technical reasons, the use of other sample carrier types is not possible, leading to no results or to incorrect results. Any attempt to insert other sample carriers into the device is strongly discouraged as this may result in damage to the device.

Warning!
Always wear gloves when working with sample carriers to avoid any potential hazards, e.g., contamination with infectious material.

The **fluidlab 1** has been designed as a directly usable standalone unit. All the necessary interactions on the device can be carried out using the touch screen. The measurement results are also output on the touch screen by default.

The following is an overview of the measuring procedure:

Step	Using **fluidlab 1** as a standalone unit
1	Start a new measurement
2	Input sample parameters
3	Sample handling and loading of sample carrier
4	Load device with sample carrier
5	Start the measurement -> Display “Decoding by anvajo”
6	Display measurement results on device
7	*Optional:* Subsequent display of saved measurement results

Note: *If the user stops or aborts a measurement before it is complete, an immediate remeasurement is not possible. A new measurement needs to be initiated.*

6.2 Measuring Procedure – Using fluidlab 1

1. Open the slider (measuring chamber cover) on the **fluidlab 1** (Figure 2-4)
2. Check that the sample carrier adapter "01" is correctly positioned in the measuring chamber (Figure 2-7) of the **fluidlab 1**. If in doubt, remove the adapter using the adapter key (see Figure 1-7). Reinsert the sample carrier adapter into the measuring chamber until it clicks into place.
3. On the **fluidlab 1** main user interface, select an appropriate species for the sample to be measured.
4. In the next window on the **fluidlab 1**, define the individual sample parameters. You can correct the information you have entered when the measurement is complete. You can enter or modify the following parameters:
   - Modify the previously selected species (optional)
   - Enter a unique patient ID
   - Enter the source of the sample
   - Enter sample colour from predefined list
   - Enter sample clarity from predefined list
   - Enter sample specific gravity (SG)
   - Enter sample dilution if the sample was diluted before analysis
5. Confirm all entries by tapping on the confirmation button ( ). The device is now ready for the insertion of the sample carrier.
6. Take a **Urine Veterinary** sample carrier from the supply box.
7. Fill the **Urine Veterinary** sample carrier with a sample (see Figure 5).

Note: *The sample dilution is entered in a format of a dilution factor:*

1:X

1 part of sample (fixed value) in X parts of total volume.

Note: The dilution ratio is then displayed as a part of result report and is used for automatic recalculation of the result as well.

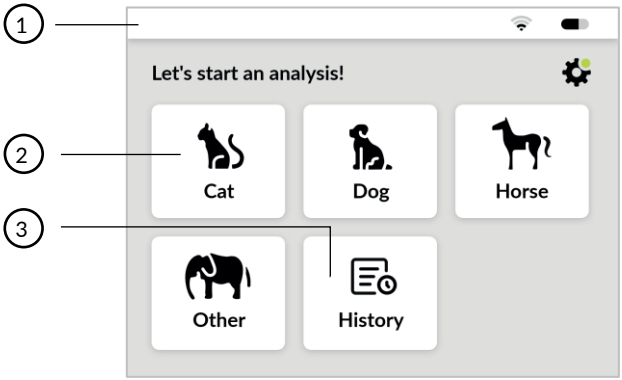
Warning!
Chapter 6.3 contains important instructions for sample preparation.

8. Insert the sample carrier into the slot on the **fluidlab 1**. Make sure the sample carrier is correctly aligned (see sample carrier instructions)!
9. The measurement will start automatically.

Note: *If the device detects that the sample carrier is missing a red screen with warning message will be displayed.*

10. The measurement may take 1 - 4 minutes, depending on the density of the sample.
11. The results will then be shown directly on the display. Details on evaluating the results may be found in Chapter 6.5.
12. The measurement results are saved in internal memory and if necessary, can be viewed and edited, either immediately or later via the “History”.

Figure 4



Item No.	Name	Description
1	Main bar	Contains icons for WLAN status and battery status
2	Analysis (measurement)	Here you can start new measurements directly on the device by tapping on a tile (species)
3	History (saved results)	List of completed measurements allowing access to the relevant results

Figure 5

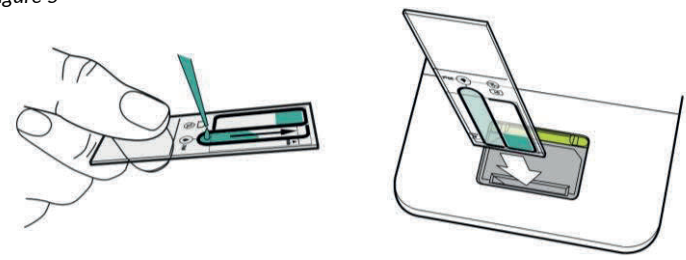
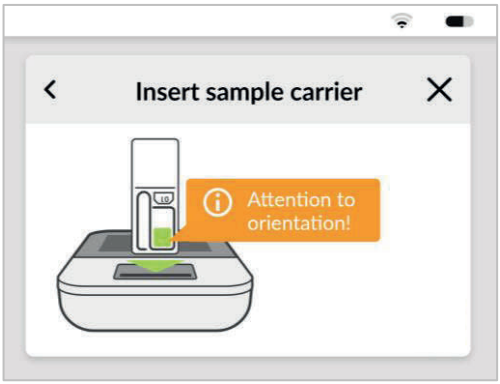


Figure 6



6.3 Sample Handling

6.3.1 General Remarks

- Sample source: The **fluidlab 1** can be used to analyse urine samples from cystocentesis, catheterisation and spontaneous urine.
- Carry out the measurement within the first 30 minutes after sample collection.
- During the measurement, the sample should be at room temperature (approx. 21°C).

Warning!
Cooling the sample may lead to the deposition of crystals in the urine, causing false-positive results.

Warning!
Check the condition of the sample before the measurement. If there is any turbidity, or if the volume is too large, follow the steps for sample preparation described in Chapter 6.3.4.

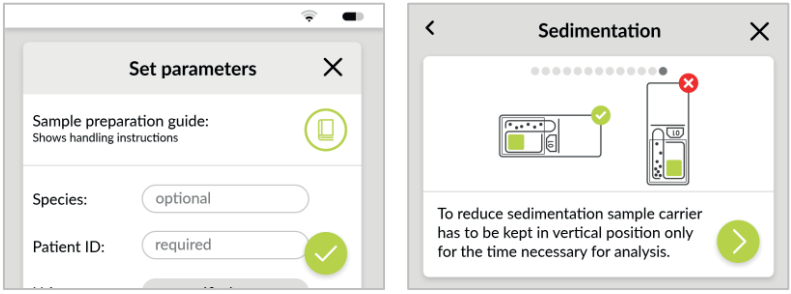
The density of objects in the sample is checked by the software before the actual calculation of the result, as erroneous results may be produced if samples are too dense or too impure. If the density or impurity is too high, the device will report “sample overfull”. This may or may not be related to the macroscopic state of the sample. In this case, dilute the sample as suggested in the Dilution Guide (see Chapter 6.3.4).

If the message is still displayed after several dilutions, it is probably the result of impurities, such as environmental dirt and the sample should not be evaluated further.

6.3.2 Sample Preparation Guide

The Sample Preparation Guide is an assistant that guides the user through a proper execution of all important pre-analytical steps and helps user to understand the device operation in order to achieve the correct analysis result.

Figure 7



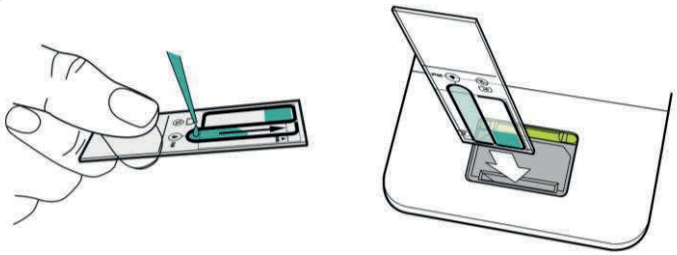
To activate the Sample Preparation Guide:

1. On the fluidlab 1 main user interface tap on the tile with the appropriate species for the sample to be measured.
2. Tap on the “Guide” button ( ) at the upper tile of “Set Parameters” screen.
3. Tap on to move forward through the slides.
4. Tap on to move backward through the slides.
5. Tap on X to close the Guide.

6.3.3 Working with Sample Carriers – Standard Procedure

1. Before loading the sample carrier, make sure that the sample is thoroughly homogenised by inverting the tube with urine sample ten times.
2. Take 20 µl from the lower third of the sample using the supplied pipette.
3. Pipette the sample into the marked area of the sample carrier (see Figure 8).

Figure 8



Warning!
Pipette tips must be replaced after each sample.

Warning!
If the sample carrier is incompletely filled (air within the measuring volume), pipetting is permitted. A full surface filling up to the "min"-mark is necessary for correct measurement results.

Note: *When filling the sample carrier, make sure that there are no air bubbles in the pipette tip, as this will result in an incorrect volume being transferred.*

Note: *The urine must be measured immediately after filling the sample carrier to minimise errors caused by evaporation of the sample.*

Warning!
The supplied pipettes must only be used in combination with disposable tips (e.g., from Eppendorf). These are not supplied and must be purchased separately. If you have any questions, please contact our support department.

6.3.4 Optional Sample Preparation

In exceptional cases, samples must be prepared in the laboratory before it is possible to perform an analysis.

- For a representative measurement, at least 0.5 ml urine sample should be present.
- Depending on the condition of the urine, it may be necessary to concentrate or dilute the solid urine components in order to obtain an optimum analysis. The criteria for assessing the sample quality are its colour and clarity.
  - For heavily clouded or red to brownish samples, a 1:5 dilution with physiological saline is recommended to avoid any overlapping of objects during the analysis.
  - If volumes > 2 ml are present in the case of pale yellow or clear urine samples, it is recommended that you should centrifuge the sample at 300 RCF (5 min) and discard the supernatant by decanting.
  - After re-dissolving the solid components in the remaining liquid, the components present in the urine can be more fully analysed.

6.4 Evaluation – Using the fluidlab 1 Directly

When the measurement has been completed, the measurement results will be shown on the display. The **fluidlab 1** gives you the option of evaluating the individual measurements in detail.

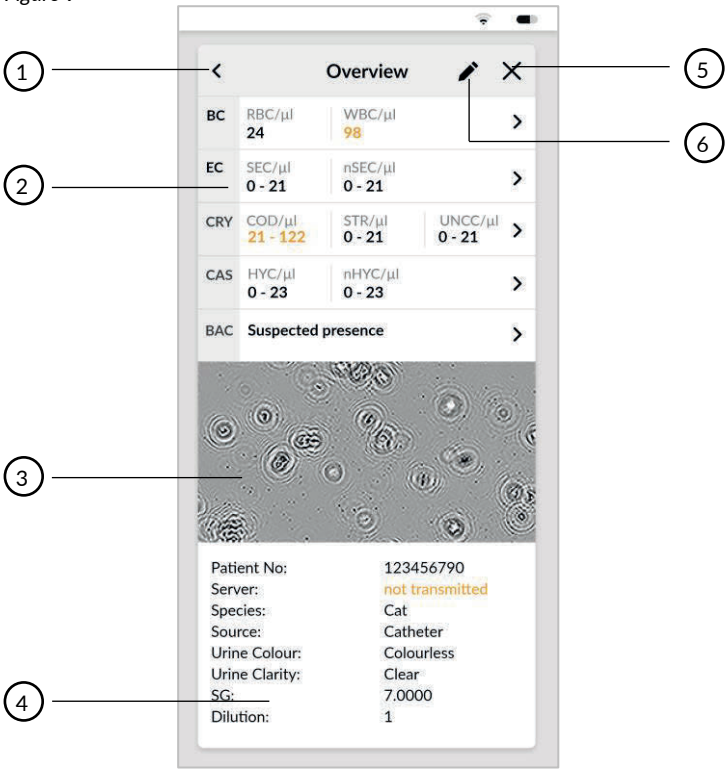
Results overview:

Note: *Scroll through the results overview (see Figure 10) by swiping your finger along the screen*

In the context of urinary diagnostics, the following parameters are analysed. The default result output values for the respective parameters as follows:

	Reference Ranges				
	Negative	**Low**	**Medium**	**High**	**Very High**
RBC	0 – 5/HPF	5 – 25/HPF	25 – 100/HPF	>100/HPF	
WBC	0 – 3/HPF	3 – 6/HPF	6 – 20 /HPF	20 – 50/HPF	>50/HPF
EC	0 – 1/HPF	1 – 5/HPF	5 – 10/HPF	10 – 20/HPF	>20/HPF
CRY	0 – 1/HPF	1 – 6/HPF	6 – 21/HPF	21 – 50/HPF	>50/HPF
	Negative		**Present**		
CAS	0/LPF		>1/LPF		
BAC	**Negative**		**Suspected Presence**		

Figure 9



Item No.	Name	Description
1	Back	Goes one step back to previous screen
2	Measurement overview	Display all parameters with their respective values
3	Microscopy image	Image of the analysed sample
4	Sample details	Patient ID, sample ID, animal/species (example: cat), sample source, colour, clarity, SG, dilution transmission status (optional)
5	Exit	Return to the main user interface
6	Edit (optional)	Subsequent editing of the sample parameters

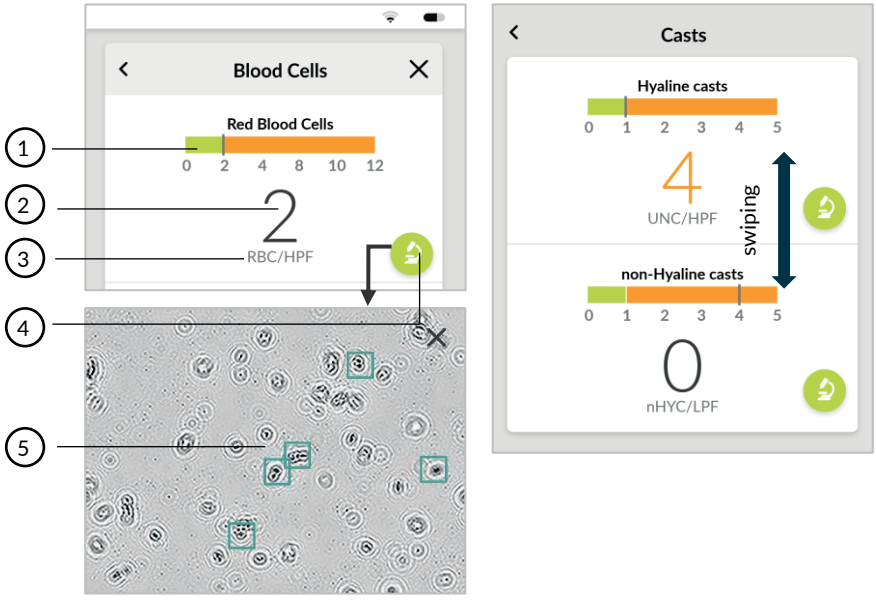
Detailed view:

Note: *Scroll through the results overview (see* Figure 10*) by swiping down the screen.*

Tap on a parameter (tile) to get a more detailed view of the selected parameter measurement result. This detailed view will contains additional information:

- A display depicting a multicoloured reference range above the result value (Figure 10 - right).
- A display of the parameter result value with appropriate units.
- When tapping on the microscope icon ( ), a microscopy image is displayed depicting the individual parameter that was selected (Figure 10 - left). The objects corresponding to the selected parameter are marked by green boxes.

Figure 10

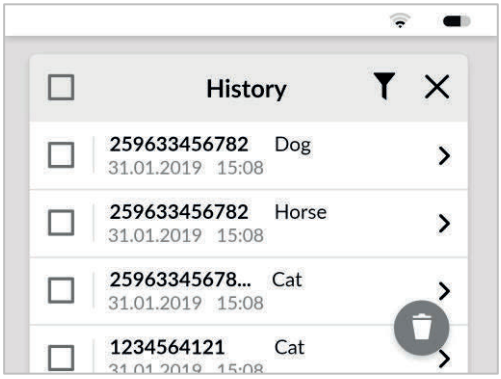


Item No.	Name	Description
1	Reference bar	A display of the measuring range with coloured reference ranges. Green = Reference range Orange = Out of reference range.
2	Result value	A representation of the result value obtained through analysis of the microscopic image. If the numerical result is in black the result value is within the reference range. If the numerical result is in orange the result value is outside the reference range.
3	Unit	The units of the resulting value. These will differ depending on the selected parameter and reporting units.
4	Microscope Icon	Shows the detailed microscopy image.
5	Microscopy image	Particles of the selected parameters are marked with green boxes.

6.5 History

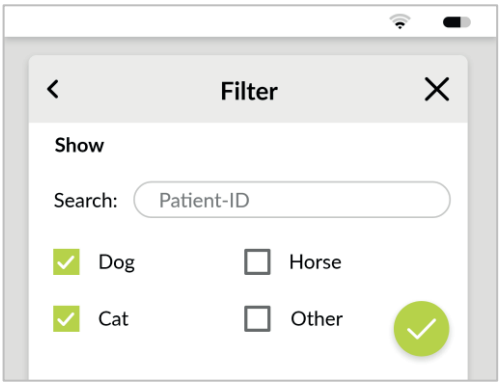
The History function of the fluidlab 1 contains all the saved measurements; they can be sorted, filtered, edited, deleted, and called up by tapping on the given item from the list (Figure 11). The measurements can be sorted by patient ID, species or time and date of measurement (Figure 12).

Figure 11



Filter
The filter function allows you to display only those measurements that were carried out with a particular patient ID, species, measurement date and time a positive or negative result of selected categories. Then, only results that match the filter specification will be displayed.

Figure 12



Edit Measurements
Manually entered parameters and sample details can be lately edited in the History.

1. Call up the selected measurement by tapping on the given item from the list.
2. Press editing icon ( ).
3. Change entries.
4. Save the changes by tapping on **X** and confirming to save performed changes.

Delete Measurements
fluidlab 1 allows to delete eiter one or multiple measurement from the History.

1. Select the check boxes of all item which has to be deleted from History.
2. Tap on delete icon ( ).

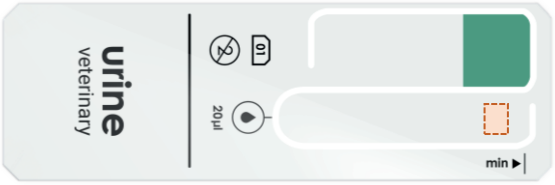
In order to delete the whole history of performed measurement, select all items by tapping on the check box in the top and tap on the delete icon ( ).

Note: *To prevent data loss make sure that you performed back-up of your data before deleting the whole measurement history.*

6.6 Microscopy of the Urine Sample with the Urine Veterinary sample carrier

In addition to being used with the **fluidlab 1**, for specific issues, the **Urine Veterinary** sample carrier can also be used with a conventional microscope. This is particularly useful if non-classified crystals have been found and further manual classification is desired, if the presence of bacteria needs to be confirmed, or if cells need to be characterised more precisely. In this case, the same sample carrier can be examined under the microscope immediately after analysis in the **fluidlab 1**.

Figure 13 - Optical area of the sample carrier



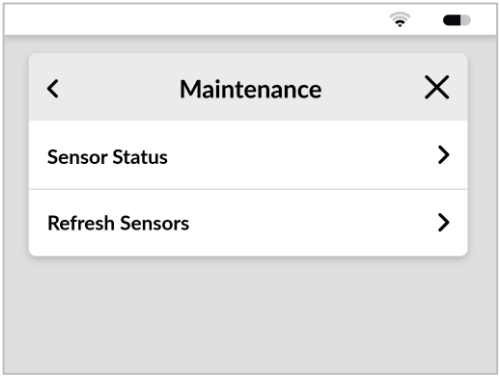
To do this, apply the sample carrier to the stage of a suitable laboratory microscope and point the lens at the area shown in red in Figure 13. After manually focusing on the focal plane, it is possible to display objects contained in the urine. It should be noted that during analysis in the **fluidlab 1**, the sample carrier is vertical and there is slow sedimentation of the cells and particles in the urine. This means that manual follow-up check should be carried out immediately after analysis in the **fluidlab 1**.
Please note that the sample carrier should be used exclusively with an intact liquid film in the sample chamber. If it has dried out, the sample carrier can no longer be used for analyses and should be discarded. In addition, the sample carrier is not suitable for archiving samples.
Furthermore, care should be taken to ensure a clean working procedure with the sample carrier, so that neither the sample nor the sample carrier is contaminated. Failure to follow these instructions may lead to false positives.

6.7 Reference Values per Parameter

Parameter	Reference value
Leukocytes	0 - 3 /HPF
Erythrocytes	0 - 5 /HPF
Bacteria	None
Epithelial cells	0 - 1 /HPF
Hyaline casts	None
Non-Hyaline casts	None
Unclassified crystals	0 - 1 /HPF
Calcium oxalat - dihydrat	0 - 1 /HPF
Struvite	0 - 1 /HPF

6.8 Quality Assurance

Figure 14



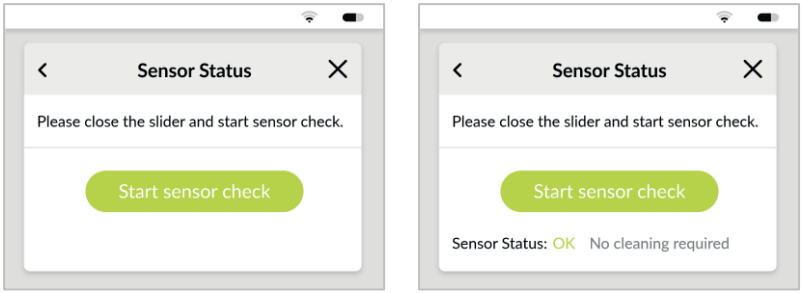
6.8.1 Sensor Status

Checking the sensor status is a quality control procedure for maintaining the **fluidlab 1**'s measuring functionality and accuracy.

1. Open the settings menu of the **fluidlab 1** by tapping the settings icon (⚙).
2. Tap on the menu item “Maintenance”.
3. Tap on the menu item “Sensor Status”.
4. Tap on “Start Sensor Check” (see Figure 15).
5. After a few seconds, the result of the sensor check will appear underneath the green button.
6. If the status is “OK”, no further action is required. In all other cases, please clean the sensor (see Chapter 7.5.3).

Warning!
The device can only be used for further measurements if the sensor status “OK” is displayed. If the sensor status “OK” cannot be obtained even after repeated cleaning of the sensor, stop using the device and contact the support (see Chapter 7.7).

Figure 15



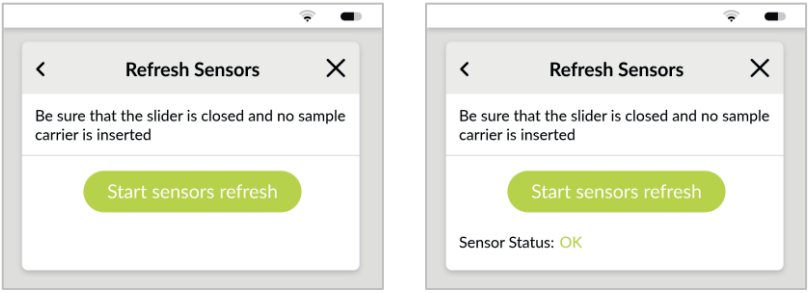
6.8.2 Refresh Sensor Data

Detecting the correct orientation of the sample carrier before the actual measurement is crucial for the correct processing of the microscopic images that are recorded. The associated sensors must always be recalibrated if no detection takes place, even if the sample carrier appears to be positioned correctly.

1. Open the settings menu of the **fluidlab 1** by tapping the settings icon ( ).
2. Tap on the menu item “Maintenance”.
3. Tap on the menu item „Refresh Sensor “.
4. Tap on “Start sensor refresh“(see Figure 16).
5. The device collects the new sensor data.
6. The end of the measurement is indicated by “OK”. Confirm the measurement by tapping the confirmation button ( ).

Warning!
The device must be positioned on a flat surface, without a sample carrier but with an adapter and a closed slider.

Figure 16



6.8.3 Microscope

Microscopic measurements do not require a blank value measurement.

Measurements for quality assurance purposes are carried out with suitable reference urine. The reference urine should be measured in accordance with Chapter 6.2 and the results compared to the supplied reference urine datasheet. If the measured values match, the quality assurance measurement is considered to be successful. If the result deviates from the reference urine datasheet, please contact the support department.

Note: *Please contact our support department for details of who to contact when ordering standardised samples (Chapter 7.7)*

7 Operating and Maintenance Instructions

7.1 Prohibitions on Use

The system should not be used:

- for medical diagnostics in human medicine
- in potentially explosive environments
- with hazardous substances (corrosive, flammable)
- with hot liquids (> 60°C)

The area of use is defined by the technical parameters specified in Chapter 8.

7.2 Description of Use

7.2.1 User Groups

The **fluidlab 1** has been designed to ensure intuitive operation. This measuring system is intended for professional users, such as laboratory assistants, veterinarians, and scientists (physicists, biologists, chemists, engineers etc.)

7.2.2 User Expertise

Operating the **fluidlab 1** does not require any specialised knowledge. The owner of the device should designate users who, based on their training, know how to operate electrical measuring systems. Users should have basic language skills in English to be able to set the desired display language (see Chapter 5.6).

The **fluidlab 1** has been designed in such a way that no special product training is required to operate it.

7.2.3 Service Life

The **fluidlab 1** is suitable for 24/7 use. Portable use is limited by the battery life. The 24/7 operating mode requires the external power supply unit to be connected. If the battery is low (20% remaining capacity), the **fluidlab 1** will indicate this graphically on the display and the battery icon on the user interface menu bar will turn red. If you see these indications, you should connect the device to the power supply unit and charge the battery. If no charging takes place, the device will shut down automatically when the remaining battery capacity falls to 5%.

The system's service life is determined to a large extent by the battery life. Under ideal conditions with the system being used as intended, 300-500 charging cycles would be standard for the built-in battery. Assuming a service life of 5 years, this corresponds to one charge per week.

Warning!
The device may only be charged and operated using the supplied power supply unit described in the specifications (Chapter 8.2). If the power supply unit fails, a replacement power supply unit should be requested from the manufacturer.

7.3 Usage Location

The **fluidlab 1** is designed for indoor use in accordance with the conditions specified in 8.1. It is possible to operate the device outdoors if the conditions specified in 8.1 are adhered to. During measurement, it is necessary to keep the measuring environment consistent in order to obtain reliable results.

7.4 Warranty Provisions

Provided that it is used as intended and that it is connected and operated in accordance with the specifications contained in this user manual, anvajo GmbH guarantees a fault-free, functioning system.

- In the event of any device malfunction or failure attributable to material or manufacturing defects, the device will be repaired free of charge within the warranty period.
- The warranty period is two years and commences on the day of delivery.
- This warranty applies only to the manufacturer's products.
- A warranty claim will not affect the duration of the warranty period. Any further claims are excluded.
- Repairs must only be carried out by the manufacturer or by authorised dealers.

Limitations:
The warranty does not cover the following faults:

- Faults caused by changes that have been made without written approval from the manufacturer
- Damage caused by normal wear
- Damage arising from the use of accessories, consumables, hardware or software that do not conform to the manufacturer's specifications
- Faults arising from improper use of the equipment or from incorrectly installed systems
- Faults that are beyond the manufacturer's control, e.g. damage caused by fire, water or lightning
- Faults arising from the transportation of the system

7.5 Cleaning

7.5.1 General

The **fluidlab 1** does not require any special form of cleaning. Contamination must be removed in accordance with Chapters 7.5.2 and 7.5.3. Cleaning must be carried out in a dry condition.

Contact with the urine samples may result in infection. Hence, the components of the device associated with the urine samples are potentially biohazardous.

Please follow Good Laboratory Practices when working with urine samples.

If the urine sample comes into contact with your skin, wash it off immediately with soap and water and apply disinfectant. If necessary, consult a physician.

Warning!
Before cleaning, disconnect the **fluidlab 1** from the mains power supply.
The device must always be switched off whilst it is being cleaned.

Warning!
To prevent accidental contamination of the measuring chamber, the slider should be closed when device is not in use.

7.5.2 External Cleaning

If the urine sample is spilled on the device, wipe it up immediately and apply disinfectant.

We recommend the following cleaning supplies:

- A soft microfibre cloth for the display and housing
- 30% isopropanol alcohol; do not use aggressive cleaning agents, such as benzene or acetone. These may damage the display coating.
- If you are using alcohol as a cleaning agent, do not apply it directly to the device. Moisten a cloth with the cleaning agent and then wipe down the device.

Warning!
If you are cleaning the unit with water or a cleaning agent, wring out the cloth so that it does not contain any excess fluid. Do not allow liquid to enter the device. If it does, it may damage the internal components.

Warning!
Sample residues on the device may lead to contamination of the user. Be sure to wear appropriate fluid resistant lab coat and approved lab gloves.

7.5.3 Cleaning the Sensor and Measuring Chamber

The measuring chamber (Figure 2-7) can be cleaned by removing the sample carrier adapter. The sample carrier adapters must be cleaned separately.

We recommend that the measuring chamber should be cleaned daily in order to maintain the device's measuring performance.

We recommend the following cleaning supplies:

- Swabs for cleaning the sensor and measuring chamber (supplied)
- A soft, clean, lint-free microfibre cloth
- 99% isopropanol alcohol; do not use aggressive cleaning agents, such as benzene or acetone, as these may damage the system
- If you are using alcohol as a cleaning agent, do not insert it directly into the measuring chamber Moisten a swab with the cleaning agent and clean the measuring chamber and the measuring optics without exerting excessive pressure.

Warning!
Damage caused to the optical components of the device as a result of contamination or carry-over contamination can be prevented by disposing of the cleaning swabs after use. The cleaning swabs are intended for single use only.

New cleaning sticks can be ordered from the Service Department (Chapter 7.7).

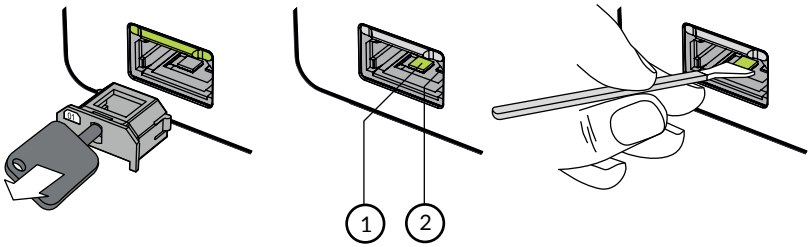
Warning!
Do not point the spray nozzle of a cleaner directly at the **fluidlab 1**'s light source.

Warning!
Do not use compressed air on the measuring chamber, as this may cause particles of dirt to settle on the internal measuring equipment. In this case, the device would have to be opened and cleaned by the service department.

Procedure in the event of contamination with dry particles (e.g., dust):

1. First remove the sample carrier adapter and clean it with a soft microfibre cloth.
2. Turn the device over so that the opening of the measuring chamber is pointing downwards; tap gently on the back of the device so that any dust or loose particles fall out.
3. With the swabs, first clean the sensor surface and then the LED.

Figure 17



Item No.	Name	Description
1	Sensor	Optical components
2	LED	

Procedure in the event of heavier contamination (e.g., ingress of fluids):

1. First remove the sample carrier adapter and clean it with a soft microfibre cloth moistened with 99% isopropanol.
2. Turn the device over so that the opening of the measuring chamber is pointing downwards; tap gently on the back of the device so that any dust or loose particles fall out.
3. Clean the measuring chamber with a soft microfibre cloth moistened with 99% isopropanol.
4. Clean the sensor surface and the LED with the swabs (supplied) moistened with 99% isopropanol, see Figure 17.

Warning!
Sample residues in the measuring chamber may lead to contamination of the user. Be sure to wear appropriate fluid resistant lab coat and approved lab gloves.

7.6 Maintenance Activities

In principle, the **fluidlab 1** is maintenance-free. To determine that it is working correctly, comparative measurements can be carried out as described in Chapter 6.8. In addition to metrological checks, the **fluidlab 1** should be checked in accordance with DGUV (German Social Accident Insurance) Regulation 3.

7.7 Service/Support

Please notify the Service department if any deviations, damage, or faults are detected on the system.

Address: anvajo GmbH
Zwickauer Straße 46
01069 Dresden

Tel.: +49 (0)351 854784 00
e-mail: support@anvajo.com
Web: https://www.anvajo.com

7.8 Transportation/Storage

The system should be stored and transported in the storage box, in accordance with the conditions specified in Chapter 8.1.
Before transportation or storage, the system should be cleaned in accordance with the cleaning instructions (Chapter 7.5).

7.9 Decommission

If the **fluidlab 1** is not going to be used for a period of > 3 months, we recommend that the system should be stored in the storage box to minimise damage and contamination.

Before the system is placed out of service, it should be cleaned in accordance with Chapter 7.5.

The battery should be placed in the optimum charge state for storage, see Chapter 2.4.

During storage, the storage conditions specified in Chapter 8.1 must be adhered to.

The person responsible for storing the device must have the necessary qualifications for this activity.

7.10 Disposal

This measuring device and its components contain electronic parts.

EU Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE) specifies that used devices should not be disposed of as general household waste, laboratory waste or hospital waste. Used systems must be collected separately, to increase the recycling rate and to reduce the impact on human health and on nature.

The device is equipped with a LiPo battery. Batteries require special care in handling and disposal (see Chapter 2). Improper disposal may have adverse effects on human health and may harm the environment.

At the end of its product life cycle, the device should be disposed of as electronic waste. Please contact the dealer from whom you purchased the device or return it directly to anvajo GmbH. We will dispose of it in a professional and environmentally friendly manner. Disposal via municipal collection points is not permitted.

Warning!
Please also observe the safety instructions in Chapter 2 when handling the device.

The sample carriers used for measuring purposes must be disposed of after use in accordance with the customer's own laboratory regulations. If the sample carriers have been mixed with human or animal samples, special care is required when handling them. These samples may be contaminated with pathogenic germs or viruses and must be handled as potentially hazardous.

Warning!
Always wear gloves when working with sample carriers to avoid any potential hazards, e.g., contamination with infectious material.

8 Technical Specifications

8.1 fluidlab 1 Specifications

Power supply	
Mains voltage (for charger)	100 - 240V_{AC}
Mains frequency (for charger)	50/60 Hz
Input current (for charger)	0.35 A
Operating voltage **fluidlab 1**	5 V_{DC}
Max. current consumption	1.5 A_{DC}
Max. power:	7.5 W
Battery life (continuous measurement operation):	1.7 h
Battery life (standby, display off):	5.5 h
Battery type	Lithium polymer 3.7 V, 1500 mAh
Charging port	USB-Port Type C
Display	
Size	3.5" with 320x240px (landscape)
Touch screen	Capacitive
WLAN	
Frequency range	2.400 – 2.4835 GHz (IEEE 802.11 b/g/n)
Radio channels	13 at IEEE 802.11 b/g/n (2.4 GHz)
Transfer rate	Realistic transfer rate: 35 Mbps IEEE 802.11 b up to 11 Mbps IEEE 802.11 g up to 54 Mbps IEEE 802.11 n up to 300/450 Mbps
Security	WPA/WPA2
Operating System	Linux
Memory	> 1000 measurements
Nominal operating range	
Ambient temperature	10°C to 30°C
Relative humidity	< 80%, without condensation at 31°C
Transport/storage conditions	
Ambient temperature	- 25° C to + 50 °C (optimum: 20 °C)
Relative humidity	Max. 95% at 25°C (optimum: 40 – 60%)
Duration of transport/storage	Max. 6 months/max. 1 year

Safety conditions	
Degree of pollution	2
Protection class in accordance with DIN VDE 106 T1	SK II
Degree of protection according to IEC 60529	IP20 IP2X ≙ Protection against ingress of solid foreign bodies ∅ ≥ 12.5 mm IPX0 ≙ No protection against ingress of water
Dimensions (L_x x W_z x H_y)	
fluidlab 1	128 mm x 94 mm x 33 mm
Weight	
fluidlab 1	240 g
Microscope assembly	
Resolution	Particle size: 3 µm – 100 µm

8.2 Accessories

Name	Part number	Description
USB power supply unit, external, type 31507W (inLine ®)	10048	Accessory **fluidlab 1**
USB connection cable [type A to type C]; 1.8 m	10049	Length: 1.8 m
Sample carrier **Urine Veterinary**	10376	25 sample carriers in a box (box = packing unit)
Standard pipette	10093	Pipette with a capacity of 20 µl
Cleaning swabs	10078	Set of 12, see Chapter 7.5.3
Sample carrier adapter 01 – **Urine Veterinary**	10039	**Warning!** Sample carrier-specific adapters
Fluidlab stand	10380	Metallic stand for operation and storage of Fluidlab
Transportation Case	10255	Transportation case with space for all fluidlab 1 set components and additional two acella boxes

9 Declaration of Confirmity

Declaration of Conformity

In accordance with the EU Directives

2014/30/EU	Directive on the harmonisation of the laws of the Member States relating to electromagnetic compatibility
2014/53/EU	Directive on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC
2011/65/EU	Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment
2017/2102/EU	Directive amending Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment

The manufacturer **anvajo GmbH**
Zwickauer Straße 46
01069 Dresden

declares with this declaration of conformity, under its sole responsibility, that the following products:

Model / Type: **Fluidlab R-300** and
Fluidlab 1

conform to the provisions of the aforementioned directives – including any applicable changes thereto in force at the time of this declaration.

The following standards and technical specifications have been taken into account:

EN 61010-1:2010	Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements
EN 62471:2008	Photobiological safety of lamps and lamp systems
EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use - EMC requirements
EN 301 489-1 V2.2.3	Electromagnetic compatibility standard for radio equipment and services - Part 1: common technical requirements
EN 301 589-17 V3.2.4	Electromagnetic compatibility standard for radio equipment and services - Part 17: specific conditions for broadband data transmission systems
EN 300 328 V2.2.2	Wideband transmission systems; Data transmission equipment operating in the 2.4 GHz band
EN IEC 63000:2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

This product also meets the general product safety standards as described in Directive 2001/95/EC on the general product safety.

Dresden, 15.03.2022

S. Fraedrich

Stefan Fraedrich (Managing Director)