

APLAB GUSTOMETER

USER'S MANUAL

Version 1.0 - 2014





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Document nr.: 2014-M-1 - Rev. 0

Date: 18/05/14

Pages: 14

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1 INTRODUCTION

APLab Gustometer is a device designed for taste research.

This manual provides a detailed description of the device and its software, and the instructions for use and maintenance of **APLab Gustometer**. The Olfactometer was originally designed by Dr. Dwight Hector.



2 WARRANTY

The *device* is guaranteed for a period of *24 months* from the purchase date, certified by a receipt or invoice
Warranty doesn't cover normal wear and tear or defects caused by rough handling.



3 SAFETY

APLab Gustometer is a laboratory device without medical approval according to 93/42/ECC directive.

It can only be used on healthy subjects.

APLab Gustometer has been designed and built to meet the strictest standards for the safety of people and things. Every measure has been adopted to avoid risks to the user.



4 SYSTEM DESCRIPTION

APLab Gustometer consists of four independent channels for delivering flavours and one for delivering water to a subject.

Each channel consists of a vessel, pump, check valve, and a 2 m line that terminates in a second valve connected to a mouth piece and misting nozzle that is held in the mouth.

Here follow the main technical characteristics:

- max. volume delivery ≈ 20 cc/sec through misting nozzle. Total delivered volume is controlled by ON time of pump. The pump flow can be regulated by a potentiometer;
- flavour lines material– Tygon;
- valve body, flavour line fittings and mouth piece PTFE or PP;
- replaceable parts: 60 cc syringe vessels, pumps, Tygon connection lines, valves, AISI 316 misting nozzle;
- Power supply: max. 12V DC protected by fuse
- Optically isolated from computer control circuits;
- PC control interface via USB connection;
- TTL trigger output for synchronisation with other devices
- Electric parts protected by removable carter
- Mounted on inox steel trolley



Figure 1: Front panel with flavorant and water vessels. Use Channel #5 (white collar) for fresh water

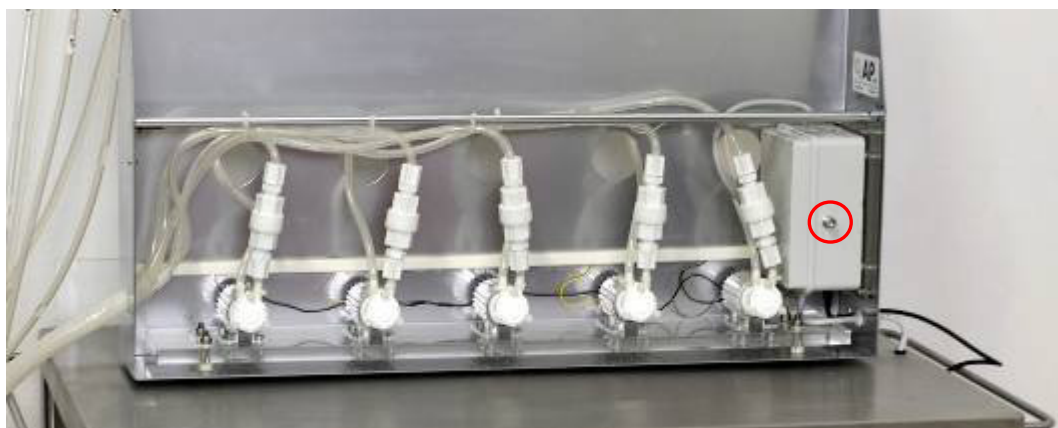


Figure 2: Rear view with carter removed. Pumps and connections



Figure 3: Teflon mouth piece with misting nozzle.

5 USING THE SYSTEM

5.1 System requirements

- OS: Windows XP, Vista, 7,8
- Disk space > 50 MB
- 1 GB (32-bit) or 2 GB (64-bit) RAM
- Intel Pentium III class processor, 1.6 GHz or higher


5.2 Installing the software

Before installing, make sure that you have admin privileges.

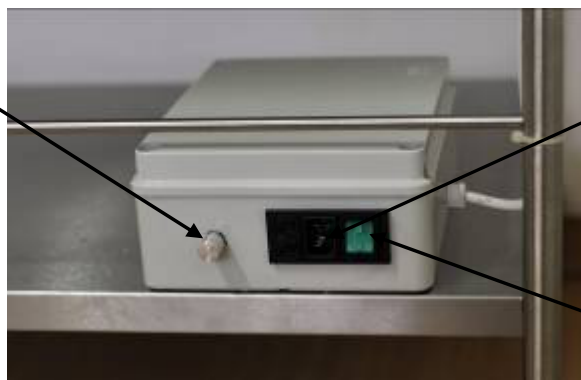
Install the PC control interface software by clicking on the *setup.exe* file found in the accompanying CD.

5.3 Connecting and using the device

To start using the device follow

1. Connect the power supply cable to the power socket on the grey case (figure 4)
2. Connect the gustometer USB cable to a PC
3. Switch on the switch button. The green light turns on.
4. Turn the PC on. Click on the  icon to start the program. The window represented in Figure 5 will appear.
5. Refer to the on line help of the PC control interface for a detailed description of the software use.

Potentiometer



Power socket

Switch button

Figure 4: power and USB connections.

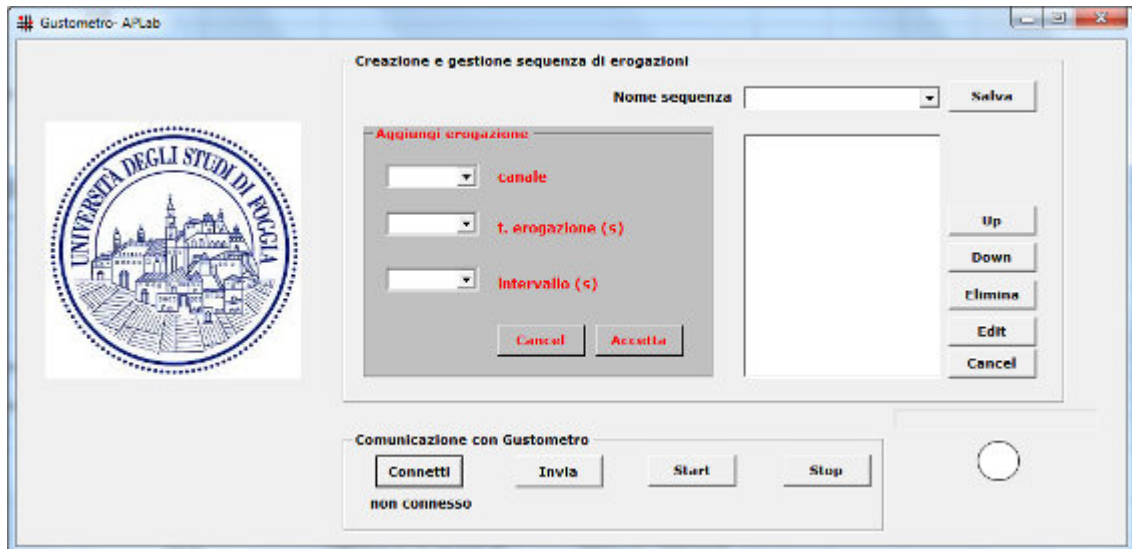


Figure 5: main window of the **APLab Gustometer** PC control interface.

The potentiometer (Figure 4) can be used to adjust the flow rate of all the pumps. Pumps cannot be regulated individually.

In order to prevent leakage, make sure that the mouth piece is always held with the nozzle up and above the upper shelf of the trolley

5.4 Trigger and synchronisation

Connect a BNC cable to the BNC connector to synchronise the gustometer to such other devices as EEG, MRI etc. The output signal switches from 0V DC to 5V DC each time one of the channels is activated and back to 0V when it is switched off.

5.5 Filling and washing procedures

To ensure a regular flow of the odorant from the vessel to the mouth piece, it is necessary to expel air bubbles from the flavour and water lines. It is therefore recommended to fill in all the the vessels and run one or more times the “Fill” sequence, which opens all the lines, one at a time, for 3 seconds. Check that all the lines are filled with liquid before starting the test.

Once the test is finished, fill all the vessels with fresh water then run the “Wash” sequence several times to wash the flavour lines.

Finally, run the “Empty” sequence one or more times to remove all the water from the lines. When the liquid no longer comes out of the mouthpiece, it is possible to close the software interface then switch off the device.



In order to prevent damage, do not activate the pumps with no liquid in the circuit for more than a few seconds.



6 TROUBLESHOOTING

1. The PC control interface can't be installed

- check that the PC has the characteristics detailed in par.
- make sure that .Net framework 3.5 is installed on your PC
- call APLab for support

2. the PC control interface it doesn't connect to the device

- check that the device is switched on and the green light is on;
- check that the USB cable is properly connected;
- from the Windows control panel -> system -> device manager -> ports (COM and LPT), check that the device is connected and the driver properly installed
- call APLab for support.

3. one or more flavours are not dispensed

- check the integrity of the pipes in the flavour line;
- check the integrity of the electrical connections to the pump;
- check the integrity of the fuse placed by the power button
- clean the pump and replace it if the problem persists;
- call APLab for support.



7 SUPPORT

For support contact:

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