ONE

Food & Beverage Analyser

User manual *rev July 15*

INDEX

1- GENERAL DESCRIPTION

*The **ONE** analyser* was designed to provide, in a compact unit, powerful functionalities for the chemical analysis of food and beverages. Thanks to these characteristics, ONE is an indispensable laboratory instrument.

The technical features of the ***ONE*** system are:

- Multilingual capacity
- Over 132 programmable methods
- Easy-to-use software, with step-by-step procedure
- Internal incubation block with 8 positions, for reading cuvettes
- Block temperature programming between 25 and 45° C

Features:

- End point reading
- Kinetics (mono- and bi-reagent)
- Fixed time (mono- and bi-reagent)
- Analysis against standards
- Colour tests (420-520-620)

The results are shown on a graphic display and printed on printer paper internal to the system.

Technical specifications

Source of light	Halogen light bulb - 12 V, 20 W
Wavelength	340 – 700 nm
Filter selection	Automatic selection. 8 interference filters: 340nm, 420nm, 492nm, 520nm, 578nm, 620nm, 650nm, 700nm.
Photometric interval	0 – 3.0 O.D.
Reading cells	Macro single-use, micro semi, or in special optic glass.
Reading time	1 sec – 999 sec
Incubation time	1 sec – 999 sec
Temperature control	Peltier elements, from 25 °C to 45 °C
Reaction volume	From 500 to 3000 µl for tests
Screen	Graphic, 128 x 64 pixels
Printer	Graphic, 24 characters per line
Delay time	5 seconds
Size	Length 29 cm x width 35 cm x height 18 cm
Weight	~ 6 kg.
Power supply	220 AC – 50/60 Hz

2- MEASUREMENT PRINCIPLE

The concentration of a solute, which absorbs light at a certain wavelength, may be determined by means of spectrophotometry. The fraction of absorbed light is proportional to the concentration of absorbing solute (Beer's law).

(1) $$I / I_0 = e^{-kc}$$

Where:

I_0 = intensity of incident light before traversing the sample.

I = intensity of light transmitted through the sample.

K = constant that depends on the length of the light trajectory, the nature of the substance and the wavelength used.

C = concentration of the substance in solution.

The equation (1) can be changed into:

$$\mathbf{Log (I_0 / I) = kc}$$

The quantity $\log(I_0/I)$ is called Optic Density (OD) or absorbency (Abs) and is proportional to the concentration.

A spectrophotometer, at a certain wavelength (measured in nanometres, nm), determines the minimum quantity of light that has traversed the sample: $OD = \text{Log} (I_0/I)$

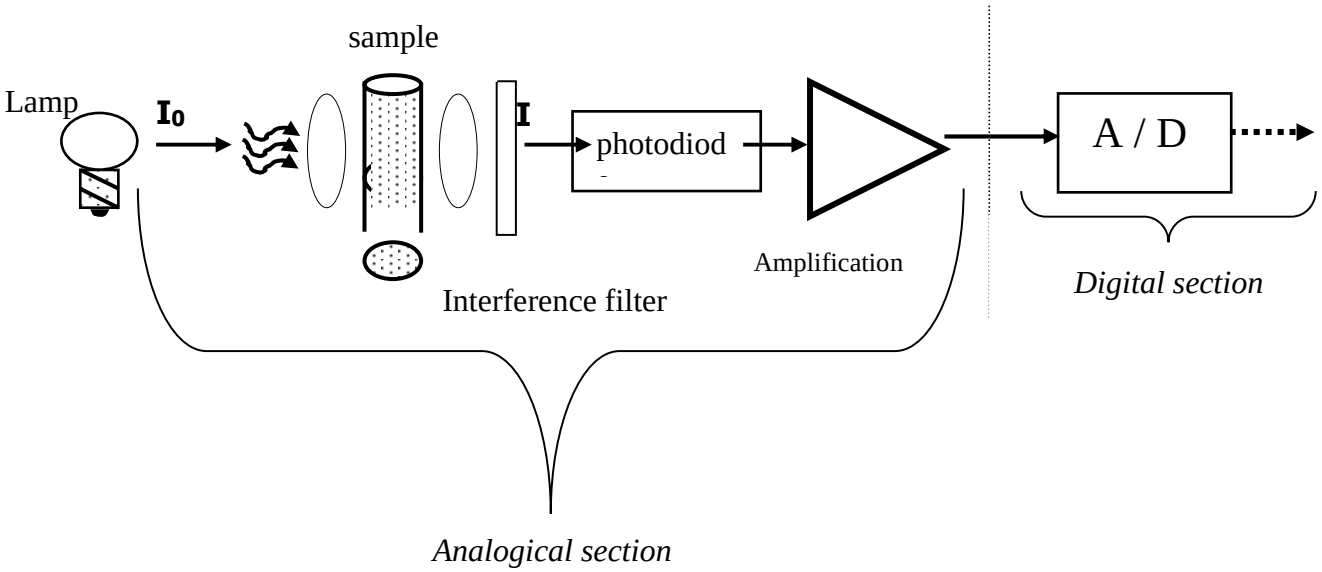
By using a reagent solution specific for the measurement of the substance to be determined, it is possible to estimate the constant (**k**) for the wavelength.

In this case, the intensity of the transmitted light will be a function of the concentration.

The instrument maintains the reading point between 25 and 37° C (programmable). The following material is necessary to proceed with the analysis:

- Micro pipette with variable volume, 1000 µl, with relative tips
- Micro pipette with variable volume, 100 µl, with relative tips
- Disposable optic plastic cuvettes and relative caps or Parafilm roll.

Below is a summarised diagram of the photometer optic:



3- INSTALLATION

Package contents

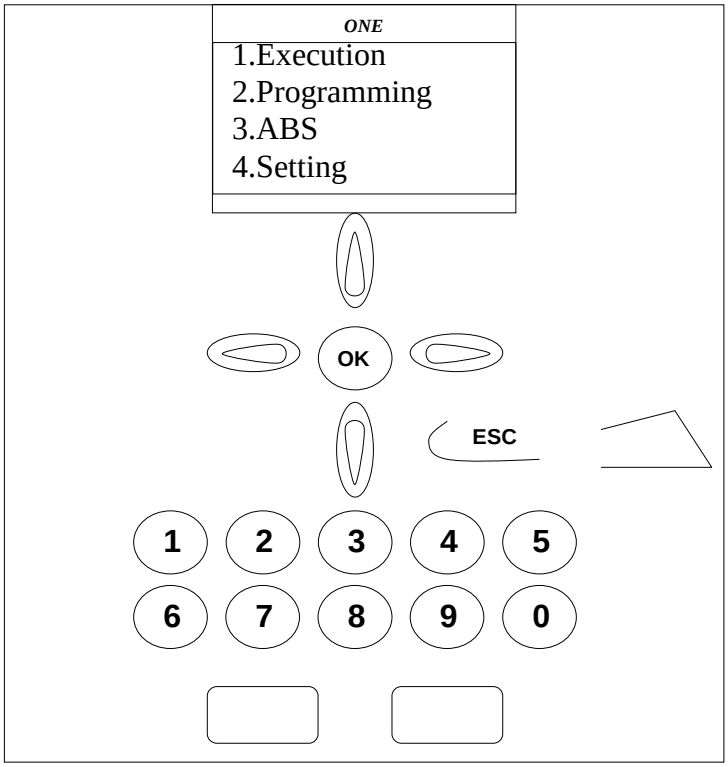
The package contains, in addition to the ONE instrument, a kit with the components required to install and start the system properly.

Should one of the following components be missing, please contact Steroglass:

- Power supply cable
- One roll of printer paper
- Fuse kit

Command board

The proper use of the command board is essential for execution of the analysis in a quick and accurate manner



KEYBOARD	FUNCTIONS
	To confirm
	To exit
	To type decimals
	To print the list of methods
From 0 to 9	To enter the numbers and select from among the various options.
Right and left arrows	To move among the various menu options To scroll right and left
Up and down arrows	To move among the various menu options To scroll up and down

POSTERIOR PANEL
On the posterior panel, there are:

- Internal cooling fan (another one is located beneath the system).
- General switch.

SYSTEM POSITIONING
The instrument must be placed in a clean environment, on a stable surface, away from direct sunlight, which may influence the working temperature and the amount of light measured by the instrument.
The following points must be seriously taken into consideration:

- the surface must be flat;
- avoid positions subject to jerky movements or vibrations;
- the instrument must not be positioned near to air conditioning vents or sources of heat.
- To ensure that the system lasts for long in good working conditions, the following temperature conditions must be met:

  5 °C – 50 °C for storage
  15 °C – 25 °C during use

CONNECTION TO POWER SUPPLY.
Check the position of the power switch according to your power grid.
Connect the plug to an earthed power socket, preferably one not shared with other electric appliances and with low voltage fluctuation regarding the specified standard voltage (10-15%).
Keep the instrument away from other appliances that generate high-frequency electric noise.
Before connecting the power cable, make sure the power voltage corresponds to the value indicated on the label on the back of the instrument.

WARNING
Do not connect the instrument to a power supply different from the value indicated on the label.

- Prior to connecting the power supply and completing the installation section, make sure the instrument is switched off (check the switch located on the back of the system).
- Make sure the main AC line has a sufficient earth line. A poor earth line connection may compromise the results of the analysis and damage the instrument.
- After switching the instrument on, be careful not to spill fluids or dust on the surface around the system.
- Keep the instrument away from unauthorised users.

If all the instructions above have been scrupulously followed, the instrument may be switched on using the switch on the rear.
RESET AND SWITCH OFF

To reset the instrument:

- Switch off the instrument

- Wait 5 seconds
- Switch the instrument on again

The instrument should only be reset when the software is not running.

BLOCK for MEASUREMENTS (incubator)

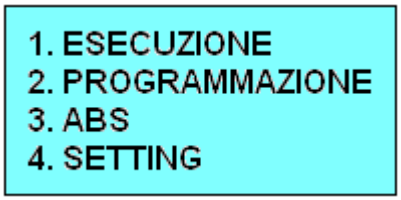
Located on the right side of the instrument. Consists of:

- a thermostat well to read the cuvettes. The programmable temperature through software ranges from 25 to 45°C.
- A cuvette incubator block with 9 positions at software-programmable temperature ranging from 25 to 45° C. The programmed temperature remains constant until the instrument remains on.
- The temperature control system can be excluded (working at room temperature).

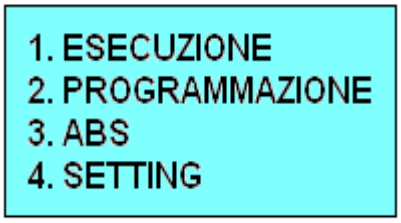
Note: It is very important to heat the cuvettes at the temperature determined by the analytic method, in order to obtain more accurate results.

4- INSTRUMENT USE

Switch the instrument on.



When the instrument is switched on, the main menu is displayed.
This menu contains four options, which may be selected by typing the corresponding number.
Each option is associated to one of the functions of the instrument.



(1)

1.EXECUTION	Carries out the methods stored in the memory.
2.PROGRAMMING	Writes and saves, modifies and cancels the residing methods.
3.ABS	Abs reading on sample, with zeroing option.
4.SETTING	Sets language and more.

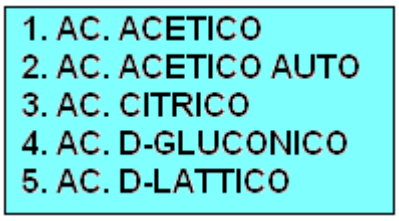
EXECUTION of a method:

This section contains information relative to the execution of a method present in the memory. The methods current in memory, enzymatic and colorimetric, amount to 55. For some parameters it is possible to use more than one analytic procedure, to help the operator according to the load of work he/she must perform. The current parameters and methods are the following:

1	Acetic acid	20	Colour	39	BT Citric
2	Auto acetic acid	21	Ionic iron	40	BT D-gluconic
3	Citric acid	22	Divalent iron	41	BT D-lactic
4	D-gluconic acid	23	Fructose	42	BT D-malic
5	D-lactic acid	24	Glycerin	43	BT L-lactic
6	D-malic acid	25	Glucose	44	BT L-malic
7	L-lactic acid	26	Glucose-Fructose	45	BT Pyruvic acid
8	L-malic acid	27	Auto glucose-fructose	46	BT Acetaldehyde
9	Auto L-malic acid	28	Magnesium	47	BT Aminic
10	Pyruvic acid	29	Total polyphenols	48	BT Ammoniacal
11	Tartaric acid	30	Potassium	49	BT Ionic iron
12	Tartaric acid 170	31	Ionic copper	50	BT Divalent iron
13	Acetic aldehyde	32	Sucrose	51	BT Fructose
14	Anthocyanin	33	SO_2 Free	52	BT Glucose
15	α-Aminic nitrogen	34	SO_2 Total	53	BT Glucose-Fructose
16	Ammoniacal nitrogen	35	Total sugars	54	BT Sucrose
17	Ionic calcium	36	Control	55	BT Total sugars
18	Catechins	37	Control 2		
19	Chlorides	38	BT Acetic		

It should be noted that, for some parameters, the operator has the possibility to choose from two different methodologies, according to the number of analysis to be performed. If the number of samples to be analysed is near or exceeds 10, it is advisable to use the BT procedure (BT stands for "battery"). The composition of the Steroglass kit fulfils all the various procedures.

Proceeding:
Type **1** to access the **EXECUTION** of the tests. The screen will display the list of tests:



(2)

The method can be accessed in two manners:

- Scroll through the list using the up and down arrows, stop the indicator on the selected method, and click OK.
- Type the number that corresponds to the desired method, and click OK to confirm.

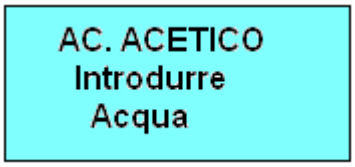
Note: If the daily session contains a few analysis with temperature in the 25° C method, these must be carried out before the others, to ensure optimal functioning of the instrument, as the time required to cool down is longer than that needed to warm up. As a rule, all enzymatic methods require a temperature of 37° C, while the colorimetric methods require 25° C or room temperature.
Below are two examples of execution of a method with the two different procedures. The two methods currently fulfil all the methods residing in memory. The examples refer to the determination of acetic acid, and can then be applied to all the other methods.
The kit in use for this determination is coded SQPE059575, packaging 5 x 20 ml, and contains:
5 x 10 ml reagent R1A
5 x 10 ml reagent R1B
1 x 2.5 ml of reagent R2
2 x 50 ml of BLANK (to be used only with the BT methods)

Prepare at least two micro pipettes with variable volume, one with 1000 µl and another with 100 µl, with relative tips.
Prepare optic plastic disposable cuvettes.

With the cursor in the ACETIC ACID position, click on OK. The following screen will be displayed:

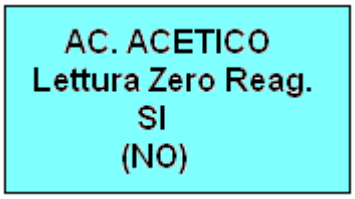
(3)

Once the temperature of 37° is reached, the temperature set in the method parameters, the following screen will be displayed:



(4)

In the photometer reading well, insert a cuvette containing at least 2 ml of distilled water. Press OK to carry out the reading. The photometer will zero the optic and then read the other absorbencies.
The next screen:



(5)

Refers to the possibility to determine the reactive white. If it was carried out recently, use the up or down arrows to select the option NO; otherwise, select YES. In this case, the next screen:

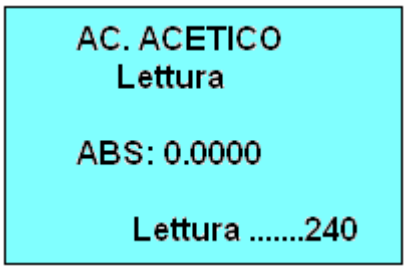
(6)

In a cuvette, pipette 1000 µl of R1A, 1000 µl of R1B and 20 µl of distilled water, close with its cap or with Parafilm, shake and place it in the reading well. Press OK to carry out the reading.

The next screen:

(7)

Pick the cuvette again, remove the cap and add 50 µl of R2 (reaction starter). Close it again, turn it up and down to shake it, replace it in the reading well, and press OK. Next screen:



(8)

Now begins the countdown of the seconds programmed in this method, from 240 to 0. When 0 is reached, the value of reactive white will be determined. While waiting, or simultaneously, it is possible to prepare the samples to be analysed, i.e. in each cuvette, 1000 µl of R1A, 1000 µl of R1B, and 20 µl of sample. Mix or place in the incubator.
After the 240 seconds of the method, the system will record the absorbency value of the reactive white, and, after pressing OK, the following screen will be displayed:

(9)

If the next screen displays the values of incline and intercept, the values set are equal to 1 and 0, perhaps to be modified after determining one or more calibrators. This modality will

be illustrated in a separate paragraph. As the method contains a specific algorithm for the calculation, use the up arrow to select NO, then press OK.

The next screen:

(10)

Remove the cuvette of the reactive white from the reading well, place the cuvette with sample no. 1, after mixing, and press OK. The reading of the white sample is quick. The next screen:

(11)

Remove the cuvette with sample no. 1 from the reading well, add 50 µl of R2, mix thoroughly, replace the cuvette in the reading well, and press OK.
The next screen:

(12)

The incubation time (240 seconds) will start running. An acoustic sign will indicate that the time is over, and the result will be displayed automatically. If programmed in menu of 4 SETTING, the result will be printed as well. Example of result displayed and printed.

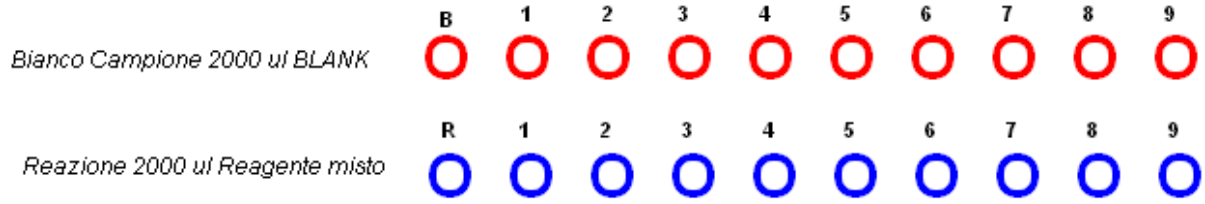
BR1 abs: 0.0001
BR2 abs: 0.0000
ACETIC ACID
Sample 1
Abs 0 : 0.2060
Abs 1 : 1.1530
AbsDiff : 0.9565
CONC: 1.15 g/l >> **(13)**

To confirm the result, press OK. The instrument will suggest the execution of Sample no. 2 according to screen (10), and so on. The execution of each sample lasts 240 seconds,

time necessary to completely develop the reaction. This is a DiffSB (Self Blank differential) method. Press Esc to return to method selection, then Esc again to return to the main menu.

Using the same kit, the quickest alternative method is the one we have identified as BT. This is a Differen. (Differential) method in which each sample requires the use of two cuvettes and the BLANK reagent. The development of the reagent at room temperature has an incubation time of 10 minutes and the reading is immediate.
Prepare Reagent 1 (mixed reagent), considering that each exam to be performed requires 1000 µl of R1A + 1000 µl of R1B + 50 µl of R2. The BLANK reagent is ready to use.
To simply things, let us hypothesise the analysis of 9 samples + reactive white; the preparation of Reagent 1 shall be: mix 1 vial of reagent R1A (10 ml) with 1 vial of Reagent R1B (10 ml), add 500 µl (0.5 ml) of reagent R2, and mix gently (total reagent volume: 20.5 ml).

Prepare two rows of 10 cuvettes each, one row dedicated to determining whites and the other to the development of the reaction, according to the following scheme:



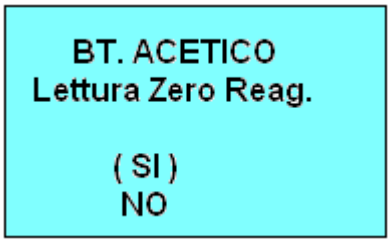
In cuvette **B** and **R** pour 20 µl of distilled water, in number **1** 20 µl of sample 1, in number **2** 20 µl of sample 2, and so on. Then add to each cuvette dedicated to the reaction 2000 µl of mixed reagent, place the cap, and shake. Add 2000 µl of BLANK reagent to each cuvette dedicated to white, place the cap, and shake. After 10 minutes of incubation, the various readings will begin.

From the main menu, type 1 to access EXECUTION. Use the up and down arrows to scroll through the list of methods, until the cursor indicates BT. ACETIC, or use the numeric keyboard to type 38, which corresponds to the method in the list. The next screen:

(1bt)

In the photometer reading well, insert a cuvette containing at least 2 ml of distilled water. Press OK to carry out the reading. The photometer will zero the optic and then read the other absorbencies.

The next screen:



(2bt)

Refers to the possibility to determine the reactive white. If it was carried out recently, use the up or down arrows to select the option NO; otherwise, select YES. In this case, the next screen:

(3bt)

Place cuvette **B** in reading well and press OK. The next screen:

(4 bt)

Place cuvette **R** in reading well and press OK. The system will now have determined the absorbency of the reactive white, a value that, prior to being taken into consideration in the calculation algorithm, must be within the high and low thresholds set in the method. The next screen:

(5bt)

If it is necessary to modify the incline of the calibration curve and the intercept, go to YES and press OK. The next screen will show the possibility to modify the values displayed, usually 1 for incline and 0 for intercept, i.e. C = 1R+0. In the absence of modifications, press OK on NO.

The next screen:

(6 bt)

Place cuvette 1 of the sample white in the reading well and press OK.

The next screen:

(7 bt)

Place cuvette 1 of the reaction in the reading well and press OK. The concentration present in the sample will now be calculated, according to the following screen, and the result will be printed, if the printed has been programmed from menu 4. SETTING.

(8 bt)

Press OK to confirm. The instrument will propose the execution of sample no. 2, starting from screen **(6 bt)**, and so on until all samples have been analysed. Press Esc to return to the selection menu, then Esc again to return to the main menu.

COLOUR DETERMINATION

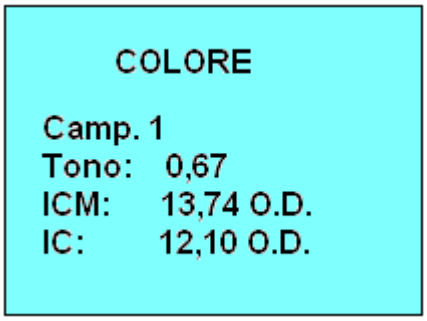
Number 20 of the method selection list is the one related to colour determination. To execute the method, prepare tubes with an optic trajectory of 1 mm and relative adaptor.
It is also possible to use those of 2 mm, modifying, in the method, the values of the factors of the three wavelengths, from 10 to 5.

With the cursor in position 20, colour method, press OK. The following screen will be displayed:

In the photometer reading well, insert a cuvette containing distilled water. Press OK to carry out the reading. The photometer will zero the optic at the three different wavelengths and then read the other absorbencies.
The next screen:

Remove the cuvette with water from the well and insert the cuvette with sample number 1. Press OK. The system will read the sample at three wavelengths, 420 nm, 520 nm, and 620 nm. At the end, it will display the results according to the next screen:

In addition to the display on the screen, the results can be printed if the printer has been programmed in the SETTING chapter.



Print:

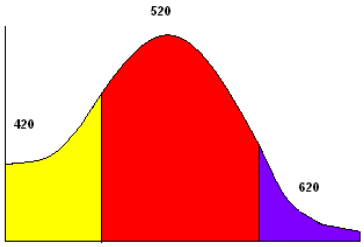
Abs 1 : 0.4868
Abs 2 : 0.7247
Abs 3 : 0.1636
Hue: 0.67
ICM: 13.74
IC: 12.10

ABS 1 is the reading executed at 420 nm
ABS 2 is the reading executed at 520 nm
ABS 3 is the reading executed at 620 nm

Hue is the ratio between wavelengths 420/520 Yellow/Red. A ratio smaller than 1 indicates a prevalence of red over yellow; above 1, a prevalence of yellow (amber) over red (wine in oxidation).

ICM (Modified Colouring Intensity) is the sum of the absorbencies at the three wavelengths, multiplied by factor 10, if determined with a cell of 1 mm of optic trajectory.

IC (Colouring Intensity) is the sum of the absorbencies at wavelengths 420 and 520, multiplied by factor 10, if determined with a cell of 1 mm of optic trajectory.



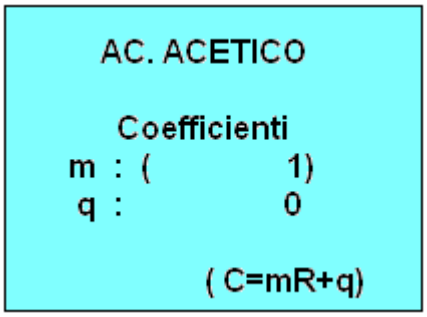
Spettro tipico di un vino rosso

To the side is the typical spectrum of a red wine at the three wavelengths. As the printed result shows the absorbencies of each single wavelength, it is possible to determine the percentage contribution of each single wavelength out of the total:
((Abs 420/(Abs420+Abs520+Abs620)) x 100 = % 420
((Abs 520/(Abs420+Abs520+Abs620)) x 100 = % 520
((Abs 620/(Abs420+Abs520+Abs620)) x 100 = % 620
The percentage distribution, i.e. the contribution of yellow, red and blue/mauve, is an essential parameter to evaluate the evolution of the process of wine ageing. In fact, the proper polymerisation of anthocyanins with tannins (micro-oxygenation) will give origin to "noble" blue/mauve polyphenols, and therefore to a percentage increase of the 620 nm contribution, in the case of undesired oxidative processes, it will increase the contribution of reading to 420 nm yellow/ochre.

COEFFICIENT CALIBRATION

During the analysis, proceeding with the example of the measurement of acetic acid, after reading Reagent Zero (Reactive White), the following screen will appear:

To proceed with the analysis, choose NO If you wish to insert a correction factor of the calculation algorithm residing in the method, choose option YES using the up and down arrows, then press OK. The following screen will be displayed:



m corrects the value of incline of the calibration curve, while q represents the value of the intercept. In the absence of corrections to make, the value of m will be equal to 1, while q will be equal to 0. Continuing with the example, during the analysis routine, analysing a standard of acetic acid with a theoretical value of 1.0 g/l, the result repeatedly found was 0.94 g/l. The correction factor will then be theoretical/found, i.e. 1/0.94 = 1.064, to be set as the new m.
If there is already an m value different from 1, this must be multiplied by 1.064, and inserted as new value different from 1, which will automatically be transferred to the method parameters.

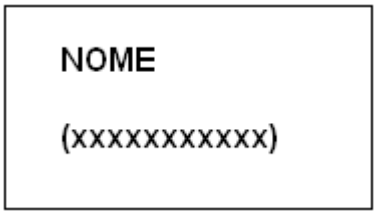
In the main menu, on point **2. <u>PROGRAMMING</u>**, it is possible to programme new methods, modify those already memorised, or delete one or all methods.
When option 2 is selected from the main menu, the screen will display:

Use the number keys to select the line and to access the selected option.

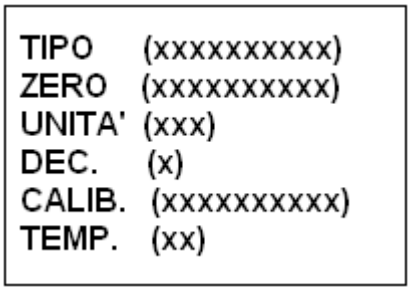
Option 1 if you wish to insert a new method
Option 2 if you wish to modify a method already memorised
Option 3 if you wish to delete a method from the memory
Option 4 if you wish to delete all memorised methods.

1. NEW inserting a new method

After selecting option 1, the first screen will require that you enter the name of the method:

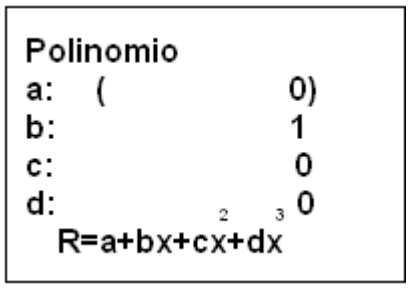


Use the up and down arrows to access the alphanumeric system, and the right and left arrows to move from key to key. Once the name has been entered, press OK to confirm. The next screen:

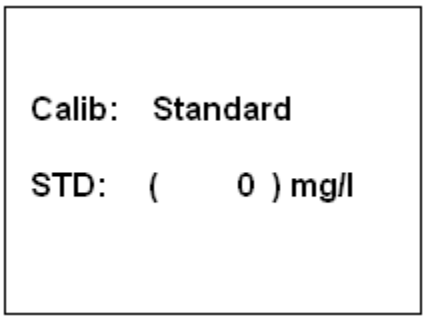


Use the right and left arrows to access the various possibilities, and the numeric keyboard to enter numbers. **TYPE** refers to the type of method. Use the right and left arrows to select from among the options end point, kinetic, fixed time, colour, differential, Self Blank differential. **ZERO** zeroes the photometer. Use the right and left arrows to choose from among water, reagent white, sample white. **UNIT** use the right and left arrows to choose the unit of measurement used to express the results. **DEC.** Use the numeric keyboard to enter the number of decimals you wish to see in the results. **CALIB.** Use the right and left arrows to select from the standard or polynomial options. **TEMP.** 0 is the equivalent of room temperature. Otherwise, enter a number between 25 and 45° C. After each step, press OK to confirm.

The next screen:



The polynomial coefficients are already present in Steroglass methods. The value of **b:** in the absence of other values, it must be equal to 1, if the selected method is the one with calibration. Represents the incline of a calibration line, that of **a:** the value ± of the intercept, if present. Correction factor for the incline and for the intercept may be inserted during the execution of the method. Press OK to leave the screen. If the choice was for standard, instead of polynomial, then the next screen will be:

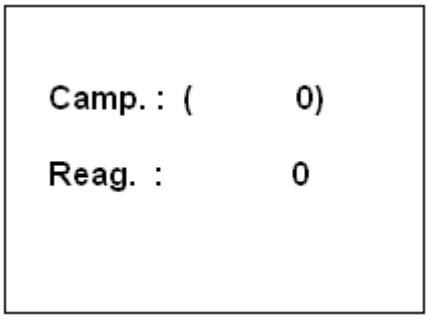


Use the numeric keyboard to enter the value of the standard that will be expressed in the previously selected unit of measurement.

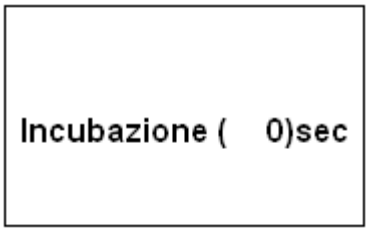
The next screen:

Use the right and left arrows to scroll through the list of interference filters contained in the photometer: 340 – 420 – 492 – 520 – 578 – 620 – 650 – 700. Press OK to confirm the desired wavelength.

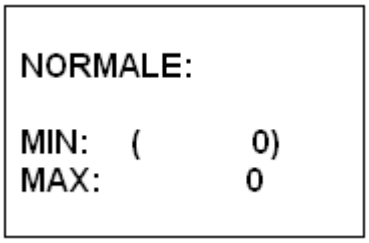
The next screen:



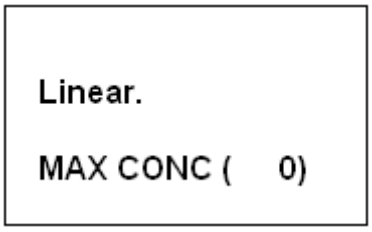
Use the keyboard to enter the volumes desired for the sample and for the reagent(s), and press OK to confirm. Use the right arrow to cancel. The next screen:



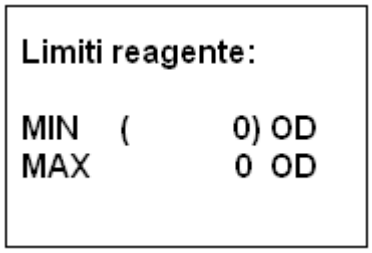
Use the numeric keyboard to enter the incubation time, then press OK to confirm. Incubation time refers to the time the cuvette remains in the reading well. The final reading will correspond to the end of the preset time. The next screen:



Use the numeric keyboard to enter the minimum and maximum time of the expected concentration interval. If this interval is exceeded, the system will issue an alarm. Press OK to confirm. Use the right arrow to cancel. The next screen:



Represents the value of maximum concentration corresponding to a linear response . Enter the number, then press OK to confirm. If this value is exceeded, the system will issue an alarm. Use the right arrow to cancel. The next screen:

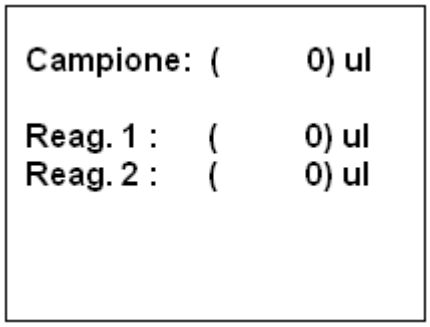


Use the numeric keyboard to enter the minimum and maximum of Optic Density determined for Reactive White. Useful to monitor its quality and stability. If one of the two

thresholds is exceeded, the system will not continue with the analysis. By entering -9.999 as minimum value and 9.999 as maximum value, this aspect of the programming is overruled. Once the values have been entered, press OK to confirm. At each step, before concluding the programming, press ESC to return to the previous screen.

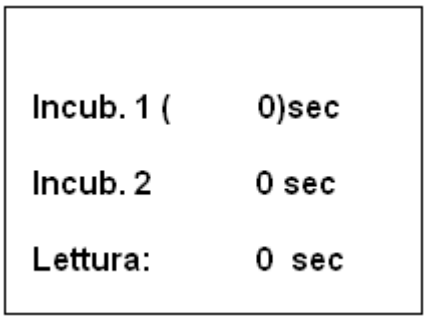
The system will ask whether it should memorise the method in the latest free memory slot. Press OK to confirm or ESC to return to the first screen of the name of the method, then ESC again to return to the main menu.

If you need to programme a Kinetic or Fixed Time method, in addition to the other methodologies, two screens will be displayed one after the other. The first:



Use the numeric keyboard to enter the volumes for the sample and the reagents. If the volume of reagent 2 is equal to 0, the successive screen requesting incubation times, the incubation time 2 will return to 0.

The second:

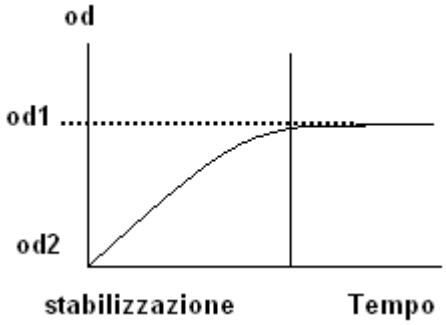


Enter the expected incubation times and for how long the reaction kinetics must be monitored.

Execution and calculation methods for the various methods:

END POINT

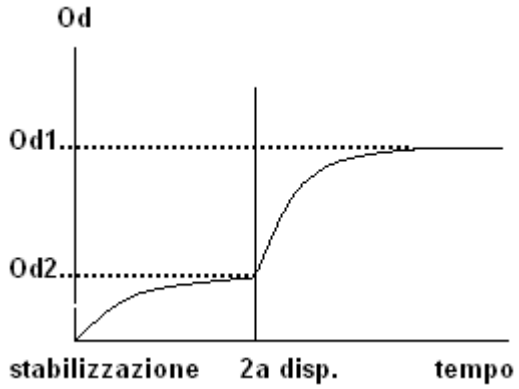
Measurement of the OD of the reaction at the end of the incubation time. The reference is the OD of the reactive white after zeroing the photometer with water.



A single reading that reaches a constant optic density at the end of the reaction.
The optic density of the end point test is the difference between the Od1 reaction and the Od2 reference.
Result = (Od1-Od2) x factor, if linear
Result = interpolation (Od1-Od2) if polynomial

DiffSB (Self-blank differential)

For reactions with two dispensations. Measurement of the OD of the reaction at the end of the incubation time. The reference is the OD of the cuvette after the 1st dispensation.



A single reading that reaches a constant optic density at the end of the reaction. Each reaction is based on two dispensations. As for our enzymatic determinations, the configuration commonly determines R1+sample in a first dispensation and R2 in a second.

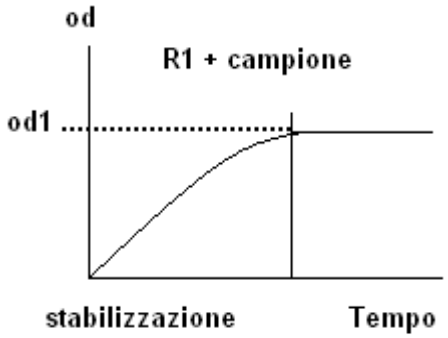
The OD1 of the reaction is to achieve the end point. The reference OD2 is the reading of the reaction before adding the second dispensation. The OD2 is corrected in order to compensate for the dilution made in a second dispensation by the volume of reagent R2.

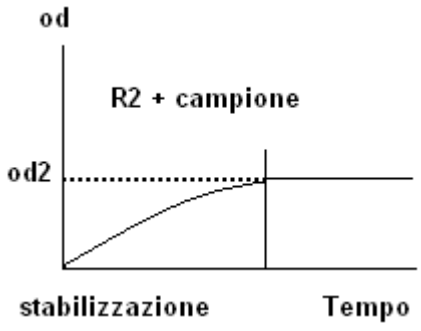
Result = (Od1-Od2) x factor, if linear

Result = interpolation (Od1-Od2) if polynomial

End point DIFFERENTIAL

Carry out two end point readings: 1st (reagent 1 + sample); 2nd (reagent 2 + sample). Measures the OD of the 1st reaction, minus the OD of the 2nd reaction. Used to determine a sample white.



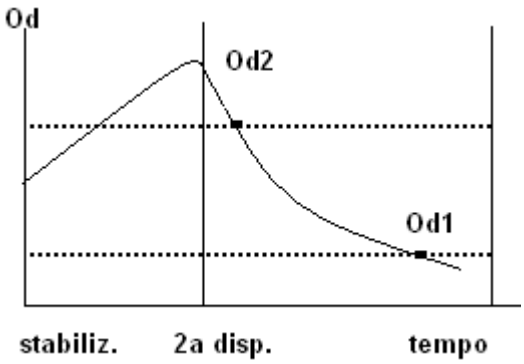


Result = (Od1-Od2) x factor, if linear

Result = interpolation (Od1-Od2) if polynomial

FIXED TIME

For reactions that have a curved OD. Measures the difference OD between the end and the beginning of the reading time.

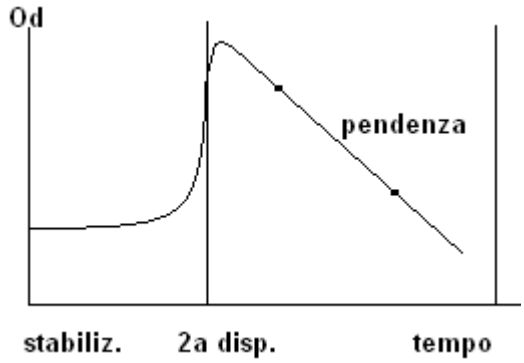


Curvilinear variation of the OD within the time limit programmed (positive or negative).

The reference OD2 is the value taken at the end of the incubation, at the beginning of the reading time. The reaction OD1 is the value taken at the end of the reading time. The OD of the Fixed Time test is the difference between the reference OD1 and the OD2.
Result = (Od1-Od2) x factor, if linear
Result = interpolation (Od1-Od2) if polynomial

KINETIC

For reactions that have linear variations of OD. Measures OD at time intervals (absorbency per minute).



The OD varies during the reaction. The OD is the incline of the line.

The reaction OD is the velocity of variation of the reaction, after incubation, during the reading time, expressed in Absorbency per minute. The optic density of the kinetic test is the OD1 of the reaction. The reference OD2 is not used.
Result = incline x factor
Result = interpolation (incline)

2. **MODIFY**

Use the up and down arrows to position the cursor in correspondence with the method you wish to modify, then press OK. Press OK again until you get to the screen containing the parameter you want to modify. Press OK again to confirm the modification. To select the method, instead of using the up and down arrows to scroll, you can also simply enter the corresponding number.

3. **DELETE**

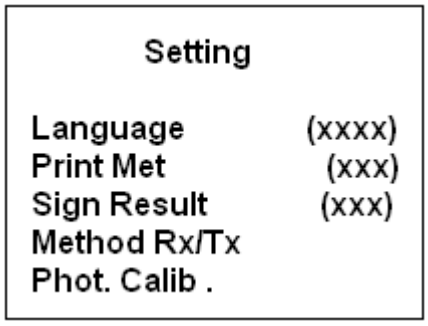
Use the up and down arrows to position the cursor in correspondence with the method you wish to delete, then press OK. The screen will display the number and the name of the method. Press OK to confirm the deletion, or ESC to exit.

4. **DELETE ALL**

The screen will show "Delete all?". Press OK to delete all the methods stored in the memory, or ESC to exit.

Point 3 of the main ABS menu allows users to determine the Absorbency values of a solution at a certain wavelength, read against water or reactive white.

Press 4 Setting from the main menu to access a submenu, from which you can establish:



Language: Use the right and left arrows to select the desired language, Italian (ITA) or English (ENG). Ok to confirm.
Print Met: The possibility to print the parameters of the method at the beginning of the analysis. Use the right and left arrow to choose either YES or NO, then press OK to confirm.
Sign Result: The possibility to print the analytic result at the end of the analysis, in addition to the result displayed on the screen. Use the right and left arrows to select either YES or NO. Press OK to confirm.
Method Rx/Tx is a procedure to be used exclusively by technical assistance, to introduce software implementations. **Phot. Calib.:** For the self-calibration of the photometer. The recommended procedure is described below.

Photometer self-calibration:

This procedure is recommended upon receiving the instrument and for assistance purposes.

1) Switch on the instrument.
2) Select 4 from the main menu. Setting

3) Use the down arrow to select "photometer calibration"
4) Press OK.
5) The instrument will wait until the temperature of 37° C is achieved.
6) The instrument will display the message "Free reading well". To free the optic trajectory, remove any resident cuvette, then press OK.
7) Wait until the test is over.
8) The instrument will ask you to insert a cuvette for the dark test. Insert the cuvette, then press OK to start the test.
9) When the "Free reading well" message is displayed, remove the dark cuvette and repeat the operation described on point 6.
10) Once the test is concluded, the instrument will return to the main menu.

ADDITIONAL ADVICE

For proper use and maintenance of the instrument:

- If the instrument is not going to be used for a long period of time, leave a capped cuvette in the reading well to prevent dust from getting in.
- Once a month, clean the outer surface with a non-abrasive detergent.
- Periodically clean the surface near the two fans, to remove dangerous dust.

5- CUSTOMER CARE

When do I have to call the Customer Service?
Should problems arise when using "*ONE analyser*" please contact STEROGLASS s.r.l. Customer Service.

Have the User's Manual and the following data available before calling:
• Device serial number (specified in the warranty certificate) ,
• Description of the activity being executed when the problem occurred ,
• Any measures taken to try and solve the problem.

How to get in touch with the Customer Service
Call or send an email to:
STEROGLASS S.r.l.
Via Romano di Sopra 2/C - 06070 S.Martino in Campo (PG) – Italy
Tel. +39 075 609091
Fax. +39 075 6090950
sat@steroglass.it

Customer service opening hours: Monday to Friday from 9:00am to 12:30 am and from 3:00pm to 5:30 pm.

6- WARRANTY

WARRANTY CONDITIONS
Every single component of this instrument has been carefully tested before it left the Factory upon the final positive test was recorded.
The instrument is under warranty for 12 months.
This card is of no value if not properly filled-in and it shall be shown to take advantage of the guaranty.
It consider either "free-of-charge" replacement or reparation of the components recognized faulty from the origin, provided the instrument is returned "freight-pre-paid" to the distributor.
The following are excluded: damages caused during the transit, faulty power connection, accident unforseen faults, damages caused by improper use and/or not in conformity with the enclosed instruction, consumable parts.

7- USERS' INFORMATION

WEEE DIRECTIVE

Pursuant to Art. 13 of Legislative Decree 25 July 2005, n. 151 "Implementation of Directives 2002/95/EC, 2002/96/ EC and 2003/108/ EC, regarding the reduction of the use of hazardous substances in electrical and electronic devices, as well as waste disposal"

The symbol of the crossed waste bin on the device indicates that at the end of its life the product must be disposed of separately from other waste.
Therefore the user must bring the device to a separate collection center for electronic and electrotechnical waste, or return it to the dealer at the time of purchase of a new device of equivalent type, at the rate of one for one.
The proper separate collection of the device for environmentally compatible recycling, treatment and disposal makes a contribution toward avoiding the possible negative effects on health and the environment and toward the recycling of the materials from which the device is made.
Unlawful disposal of the product by the user will result in the application of the administrative penalties provided for by D.Lgs. no. 22/1997 (Article 50 et seq. of D.Lgs. no. 22/1997)

STEROGLASS S.r.l. shall not be responsible for errors or damage due to operator negligence, the failure to read the instructions contained in this manual, or for damage caused by the supply or use of this product.

STEROGLASS S.r.l. also reserves the right to make changes and/or deletions to this manual without notice.