PASTEL UV

User's manual

Ref. 0NPVAU-E

SECOMAM
BY AQUALABO

SUMMARY

1 REMARKS

The Analyser Pastel UV is manufactured by AQUALABO ANALYSE.

The information contained in this document may be the object of patents or patent applications by AQUALABO ANALYSE. The possession of this document does not confer any license to such patents.

The following names are AQUALABO ANALYSE's registered trademarks throughout the world.
SECOMAM
PASTEL UV

This manual is updated periodically. The updates are included in the new editions.

All information supplied in this edition of the manual may be amended before the products described herein are available.

2 WARRANTY

The new equipment and material sold by AQUALABO ANALYSE is guaranteed against any manufacturing defects for 3 years (unless otherwise stated by AQUALABO ANALYSE) with effect:

- From the technical acceptance of the equipment in the factory by the buyer or his designee,
- or failing this :
  - For Metropolitan France: from the date on the delivery note.
  - For other destinations: from the date of factory shipment certified by air waybill, consignment note or bill of lading.

The SECOMAM company guarantee applies exclusively to defectiveness arising from a design fault or from a concealed defect. It is strictly limited to the free dispatching of replacement parts (except for consumable items) or to the repairing of the equipment in our workshops within a deadline of 10 working days (shipping delay not included).

By express agreement, the following are strictly excluded from our guarantee:

- All damages, notably for staff costs, loss of earnings, business trouble, etc
- Any breakdown due to an incorrect use of the equipment (non adapted mains, fall, attempt at transformation, etc) or to a lack of maintenance by the user or to poor storage conditions.
- Any breakdown due to the use of parts not supplied by AQUALABO ANALYSE, on AQUALABO ANALYSE equipment
- Any breakdown due to the transporting of the equipment in packaging which is not its original packaging
- The lamps, the cells and generally any item which appears in the "accessories" section on the price list.

Our customers are kindly asked to apply for our consent before returning any instrument for repair. No return of materials may be accepted without the prior written consent of our Servicing after Sales Management which will precise the terms of such return.
If the above consent is given, articles shall be returned in their original packaging on a prepaid basis to the following address:

AQUALABO ANALYSE SECOMAM - 91 Avenue Des Pins d'Alep – 30100 ALES FRANCE

We reserve the right to reship all instruments received collect failing such consent.

Whatever method and conditions of transport are chosen for the shipment of the equipment to be repaired under guarantee, in the original packaging, the corresponding costs and the insurance costs will be payable by the customer.

Any damage connected to the return transport of the equipment falls within the framework of the guarantee on the express condition that the customer has sent his complaint within forty-eight hours by registered letter with acknowledgement of receipt to the carrier. A copy of the letter should be sent to AQUALABO ANALYSE.

For equipment with a guaranty card, this is only applicable if the card delivered with the equipment is returned to AQUALABO ANALYSE duly completed.

SOFTWARE GUARANTEE

The software is guaranteed by the designer or the distributor of the software under the conditions specified in the literature accompanying the aforementioned software packages.
Under no circumstances whatsoever will AQUALABO ANALYSE supply any type of guarantee for software packages.
By express agreement, all damages, notably for staff costs, lost of earnings; business trouble, etc are strictly excluded from our guarantee.
The customer is informed that the software cannot be guaranteed exempt from defects or bugs.

TRADE SECRET AND PROPERTY RIGHTS

3 INFORMATION

The AQUALABO ANALYSE equipment has been designed, manufactured, tested and inspected according to the ISO 9001 standards.

If the unit is not immediately installed, it should be stored in a dry and clean area. The storage temperature should be between 10 and 35°C.

AQUALABO ANALYSE equipment is carefully inspected before it is packed. As soon as you receive your equipment, check the condition of the packaging and if you notice any problems, notify your carrier within 48 hours. Then consult the packing list and check that everything is in order. Finally, if you discover that something is missing, or if the goods are damaged immediately notify AQUALABO ANALYSE.

4 PRECAUTIONS OF USE

- **Always make sure that the instrument is connected on the good voltage.**
  (Between 100 – 240V 50-60Hz)

- **Always disconnect the mains plug before starting any work inside the instrument.**

- **When dangerous substances for health and environment are used, the laboratory or site rules, where the instrument is installed must be followed.**

- **Take all the necessary precautions, during the use the instrument, to protect the operator from eventual liquids leaks or spills or possible radiations (protective gloves, anti-UV radiation glasses , protected clothes, etc)**

- **The deuterium lamp used in this unit emits UV radiation.**

- **Install the instrument in a ventilated area because it is likely to generate ozone, which, beyond the limits below, can harm health.**
  Exposure average value = 100 ppb
  Exposure limits value = 200 ppb

- **All operations made inside the instrument, must be done by AQUALABO ANALYSE or by AQUALABO ANALYSE's authorized technicians.**

- **Use of the spectrophotometer without danger**

  If it is necessary to suppose that it is not possible any more to use the spectrophotometer without danger, it is necessary to put it out of service and to protect it from involuntary starting up again.

  Use without danger will not be possible when the spectrophotometer

  - **suffered damage during transportation.**
  - **was stored under inadequate conditions for one relatively long period**
  - **present some visible damages.**
  - **does not function any more as described in the user's manual.**

In case of doubt, consult the spectrophotometer supplier.

5 INSTALLATION

5.1 WHERE TO INSTALL

The PASTEL-UV is a portable analyzer for in situ measurement; however, it is best used in clean dry places, shaded from direct light and excess heat (temperature range 5-40° C).
Pay careful attention to the rigidity and flatness of the table or bench where you put the instrument in order to avoid altering the optical light path.

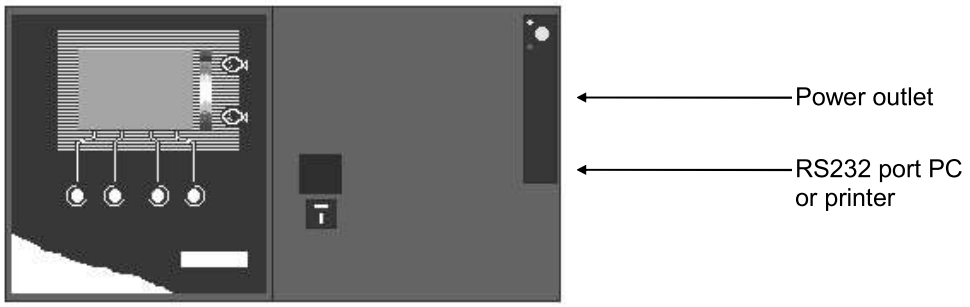
5.2 POWER SUPPLY CHARACTERISTIC

The PASTEL-UV operates using a Nickel Cadmium battery with autonomy of 100 measurements.

To recharge this battery, you will need to connect it to the mains: 230V + 10 %, 50-60 Hz, 50 VA (according to the International Standard IEC-38 of 1983). The electrical socket should be configured to the existing standards and have a ground connection. In order to fully charge the battery, it should remain connected for at least twelve hours. When the battery is completely charged, the power light on the upper right hand side of the instrument will light up green. If the battery is not completely charged, this light will be red.

6 CONNECTIONS

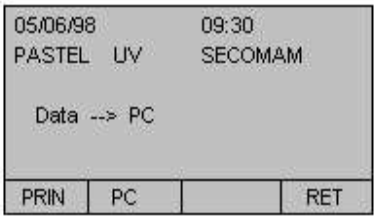
6.1 ANALYZER CONNECTIONS



All external connecting cables (PASTEL-UV, PC,…) should not exceed 3 meters (it is strongly recommended to use the cables supplied by SECOMAM).
Following the connection of the external device:

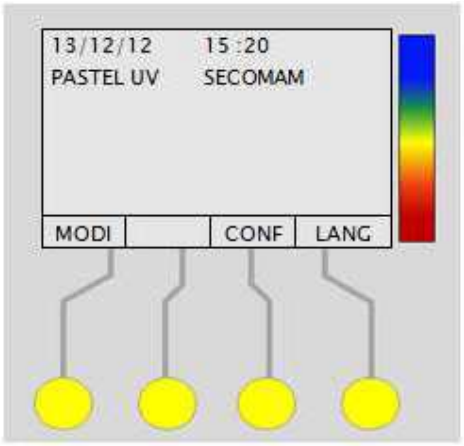
Starting with the main menu:
Select “CONF”
Select “PERI”
Select “OTH”
Select “OUT”

According to the type of peripheral, select “PRIN” (printer) or “PC.”

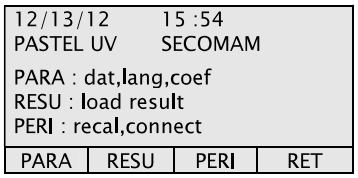


6.2 HOW TO CONNECT A PASTEL UV TO A PC

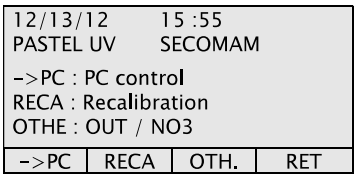
After the auto-test the following screen appears:



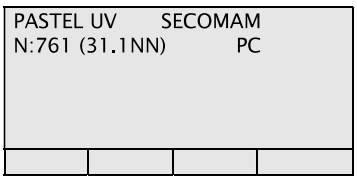
Click on « CONF »



Click on « PERI »

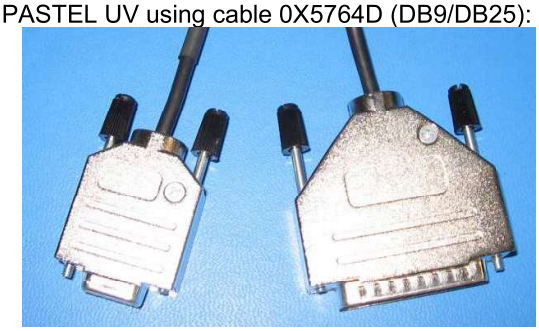


Click on « ->PC »



The instrument is ready to be driven via UV Pro

Always connect the PASTEL UV using cable 0X5764D (DB9/DB25):



If your PC is equipped with RS 232 connect as followed:

PASTEL UV view

PC view

Launch UV Pro, to connect see user manual

If your PC does not have RS 232 output but USB, connect as followed:

Note: SECOMAM supplies with UV Pro software the USB adapter

Cable + adapter pack USB-RS232 with adapter Reference 0M8142 (DB9/DB25) (previous version; before October 2012):

If you have the USB adapter reference 0M9009 (new version) you need to download the driver on the following link: http://www.ftdichip.com/Drivers/VCP.htm :

Connect the adapter to the PC and to the cable 0X5764D (DB9/DB25)

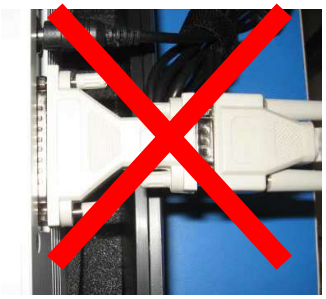
PC output:


or

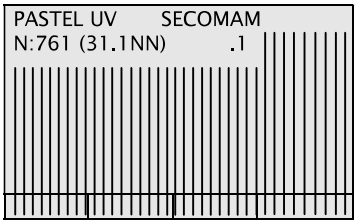

PASTEL UV output:

CAUTION: never connect the adapter DB9/DB25 directly to the PASTEL UV:





This can cause a PASTEL UV malfunction:



7 MEASUREMENTS

Recall of measurement range

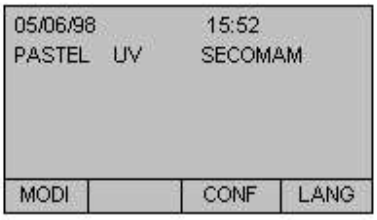
PARAMETER	RANGE (mg/l)	Correlation factor. (r^2)
TOC nat.W	0,5-10	939 (1,0-10 mg/l)
TOC eff.	5-150	963 (10-150 mg/l)
COD	5-350	958 (20-500 mg/l)
BOD	5-250	919 (20-250 mg/l)
TSS nat.W.	5-100	910 (10-100 mg/l)
TSS eff.	5-300	943 (10-300 mg/l)
Nitrate*	0,5-40	992 (1,0-15 mg/l)
Detergents**	0,5-25	999(1,0-25 mg/l)

* other range available : 1-200 mg
** express in D.B.S.
*** proportioned additions method.

In order to begin taking measurements:

1. If peripheral equipment is going to be utilized, (printer, and power supply) connect it to the PASTEL-UV and turn the instrument on.
2. Remove the cell holder (as instructed by the instrument) so that the device can perform its autotest.

At the end of the autotest, the device displays this menu:

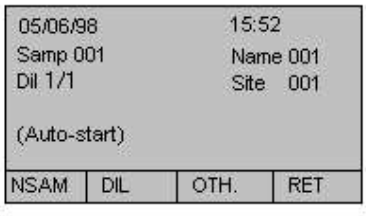


MODI: Modification of measurement parameters
CONF: Modification of the date, management of results in memory, recalibrations, and coefficients
LANG: Modification of the language

7.1 MODIFYING MEASUREMENTS PARAMETERS

The software of the PASTEL-UV permits the modification of the sample, number, site, user name and dilution factor.

Following the selection of MODI, the following will appear:



NSAM : Modification of the sample number
DIL : Modification of the dilution factor
OTH : Other modifications
RET : Return to the main menu

Following the selection of OTH, the following will appear:

NAME: Modification of the user id
SITE: Modification of the site id
OTH: Return to the previous screen
RET: Return to the main menu

7.2 MODIFICATION OFTHE SAMPLE, USER AND SITE

NSAM: Modification of the sample number
DIL Modification of the dilution
OTH: Modification to the name and the site
RET: Return to the previous menu

- Select “OTH”
- Select “NAME”

The parameter to modify appears highlighted:

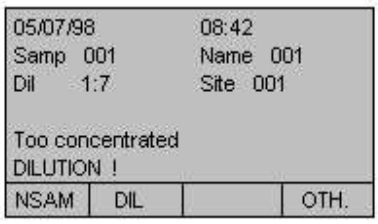
- using the - and + keys, select the desired value
- using the VAL key, enter the selection and return to the previous screen

Proceed in the same manner in order to modify the sample number and site identifier.

TIP: The instrument will store up to 200 sample results in memory. If the results are not going to be used right away, it is helpful to establish a good record keeping system.

7.3 MODIFICATION OF THE DILUTION FACTOR

When sample is too concentrated, PASTEL UV suggests a dilution rate in the form of a ratio **1/x**
(**1** sample volume for **x** total volume to be measured)
Example: Dilution 1/1 -> 1 sample volume for 1 total volume to be measured -> **NO DILUTION**
Dilution 1/2 -> 1 sample volume for 2 total volumes to be measured -> 1 sample volume + 1 distilled water volume and so on.



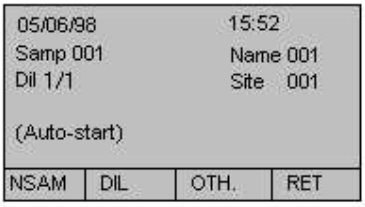
TIP: The software is set up to provide suggested dilutions to the original sample. In some cases, it may suggest several dilutions in succession. Each of these dilutions should be applied to the **original** sample. **They are not cumulative.**

The dilution factor suggested by the instrument will be taken into account when the results of the measurement are displayed. **For the next sample which is measured, the dilution factor is reset to 1:0.**

The user can also manually set the dilution factor:

From the main menu:

- Select “MODI”

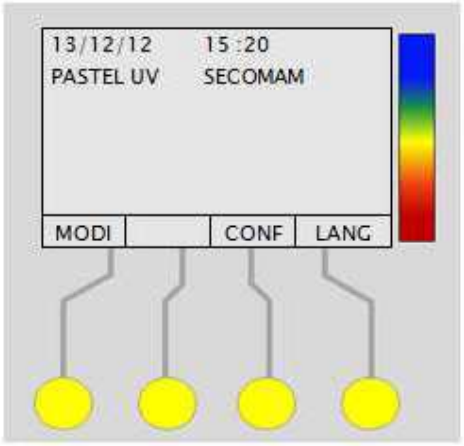


- Select “DIL”

- Use the - and + keys to increase or decrease the dilution factor
- Use the VAL key to except the value and return to the previous screen

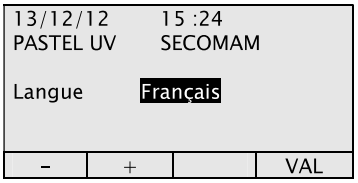
7.4 MODIFICATION OF THE LANGUAGE

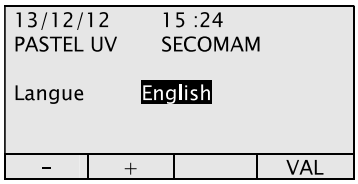
After the auto-test, the following screen appears:



Click on « LANG »

To change language press on « + » using the keyboard





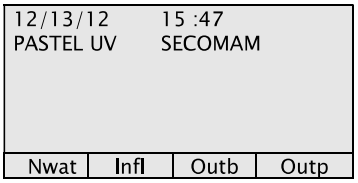
Then click on « VAL »

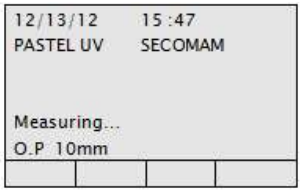
In order for the modification to be effective, proceed with a measurement.

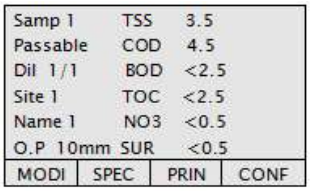
Note: if, after you made the modification, you switch off the instrument and then turn it back on the modification will not be taken into account.

To launch a measurement insert the cell and select one of the parameters.

Example:

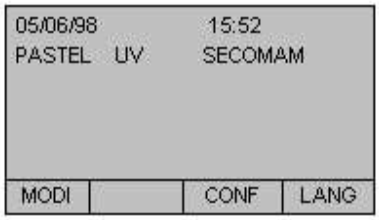






7.5 MODIFICATION OF THE DATE, MANAGEMENT OF THE RESULTS IN MEMORY, RECALIBRATIONS AND COEFFICIENTS

From the main menu:



- Select “CONF”

PARA: Modification of the date, language and coefficients
RESU: Management of results
PERI: Recalibration, connections to peripherals

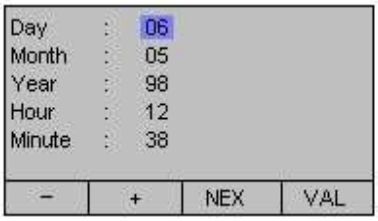
7.5.1 Modification of the date, language and coefficients

- Select “PARA”

DATE: Modify date
LANG: Modify language
COEF: Modification of coefficients

In order to modify the DATE:

- Select “DATE”



- Use the - and + keys to increase or decrease the numbered selection which is highlighted
- Use the NEX key to move the highlighted region to the next selection
- Use the VAL key to accept the date and return to the previous display

In order to modify the LANGUAGE:
see page(s) 19

In order to modify the COEFFICIENTS:
see page(s) 20

7.5.2 Accessing and Managing the Results

- see page(s) 13

7.5.3 Recalibrating the PASTEL-UV and Connections to the Peripherals

Recalibrating - see page(s) 34
Connections - see page(s) 15, 17.

7.6 MEASUREMENT

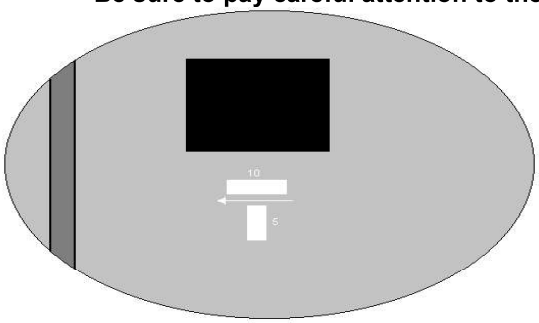
Do not use a narrow pipette tip, as it will filter the suspended solids.

Be careful not to get any fingerprints on the cuvette. It is advisable to wear latex gloves if possible

Preparing the sample

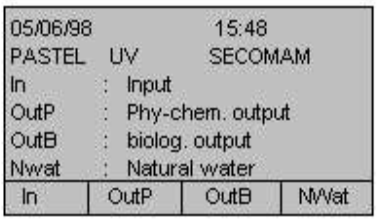
a. Draw 1 ml of sample using the micropipette.
b. Dispense 1 ml of sample into the sample cuvette.
c. Carefully wipe the cell. If necessary, extract the cell from its support, wipe it carefully and replace it.
d. Mix the sample.
e. Carefully examine the sample and cuvette to make sure that no air bubbles have been introduced.
f. Place the cuvette into the PASTEL-UV.

Be sure to pay careful attention to the optical path used.



If the sample has a low concentration, start with an optical path of 10mm. If the sample is too concentrated to run with this configuration, the instrument will suggest using the 5 mm path length.

The instrument will automatically begin the analysis and display:



IN : Influent containing a maximum of40% industrial sewage
OUTP : Effluent of physical of chemical treatment processes
OUTB : Effluent of biological treatment processes
NWAT : Water from rivers, lakes, wells, etc. containing salt content of < 18%

Choose the type of water which corresponds to the sample

The measurement and calculations require approximately 45 seconds. Results are displayed automatically and are printed, if a printer is connected.

In order to perform the next measurement:

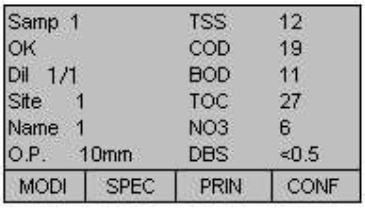
- Remove the cuvette
- **Clean the cuvette** - see page(s) 31, 34.
- Prepare a new sample and place it into the cuvette
- Reintroduce the cuvette into the instrument
- Select the appropriate water type

If running a sample which needs to be diluted:

a. Mix the sample thoroughly to insure that it is a homogeneous mixture.
b. Place 1 ml of sample into an appropriate beaker or vessel
c. Place x ml of distilled water into the same beaker or vessel (where x represents the dilution factor given by the PASTEL-UV or calculated manually).
d. Thoroughly mix
e. Place 1 ml of this diluted solution into the sample cuvette, making sure that no air bubbles are introduced and the cuvette is clean.
f. Place the cuvette into the instrument and select the appropriate water type.
g. The dilution factor will automatically be factored into the result calculation and stored along with the sample in memory.

7.7 INTERPRETATION OF THE MEASUREMENT

7.7.1 Standard Samples



MODI : Change measurement parameters
SPEC : Display the UV spectrum of the sample
PRIN : Print results
CONF : Change the configuration

If the sample can be analyzed, the instrument will give results in mg/1 (ppm) for TSS, COD, BOD, TOC, NO3, and DBS.

Changing the Measurement Parameters

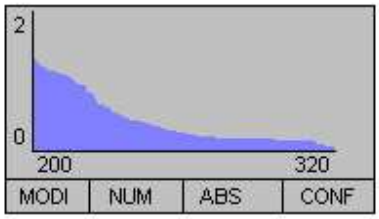
- Select “MODI”
- see page(s) 17.

Changing the Configuration

- Select “CONF”
- see page(s) 20.

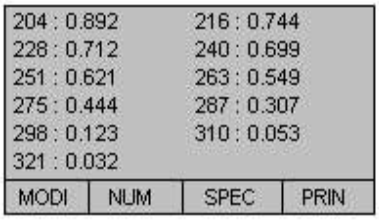
Changing the Format of the Results

- Select “SPEC”



MODI : Change measurement parameters
NUM : Display the numeric values of the results
ABS: Display the absorbance values of the UV spectrum
CONF : Change the configuration

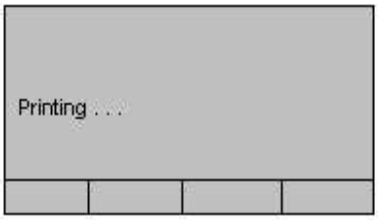
- Select “ABS”



NOTE: The results display must be set to the numeric values before another sample may be run.

Printing the Results

- Select “PRIN”

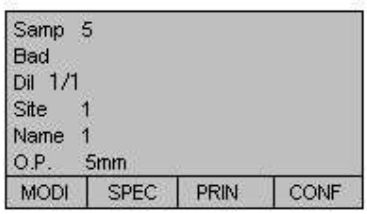


The results are automatically printed.

Problem Samples

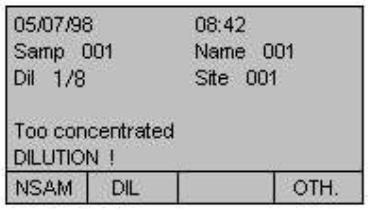
If the sample is out of range or unreadable, two results are possible:

1. Message: Bad Sample



The spectrum of the water cannot be reconstituted by the PASTEL-UV, and a message appears (Bad Sample). This is an indication of accidental pollution or an unknown chemical interference. An adapted base must be used to analyze this sample.

2. If the sample is too concentrated, the PASTEL-UV suggests a dilution rate.



Perform the dilution using distilled water.

7.8 RESULTS OF NO3 IN NNO3

It is possible to have result expressed in NO3 or in NNO3:

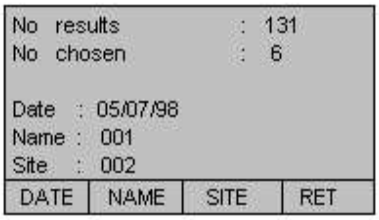
- Select “CONF”.
- Select “PERI”
- Select “OTH”
- Select “NO3” to have the results expressed in that format and vice versa in NO3.
- Select “RET” four times to return to the main menu.

7.9 EXPORTING OF RESULTS

7.9.1 Sorting Results

The user can, before exporting results to printer or P.C. sort them by name, date, identification code of user, site or by number of sample.

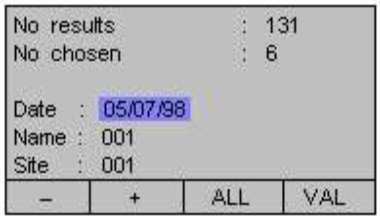
- Select “CONF”
- Select “RESU”
- Select “LOAD”
- Select “CRIT”



+/- : Increases or decreases the value
ALL: Select all dates when measurements have been made

In this example , the memory contains 131 results of which 6 have been selected, corresponding to the date of 05/07/98. The name 001 and the site 002. The user can change the criteria chosen.

- Select “CRIT”
- Select “DATE”



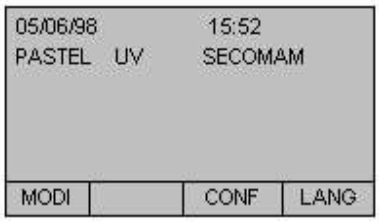
- Enter and return to previous screen with “VAL”

Proceed in the same manner in order to select NAME and SITE.

7.9.2 Export to printer

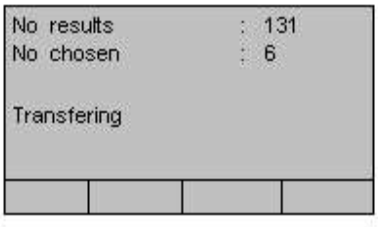
Connect the PASTEL-UV to the printer using the appropriate cable. If you do not have the correct cable, it is available through the distributor. From the main menu:

- Select “CONF”
- Select “OTH”
- Select “OUT”
- Select “PRIN”
- Select “RET” four times to return to the main menu.



From the main menu:

- Select “CONF”
- Select “RESU”
- Select “TRSF”
- Select “TRSF”



Results will be printed in the following format:

7.9.3 Exporting to P.C.

The PASTEL-UV should be connected to the computer using the appropriate cable (available through the distributor.) The following steps are necessary to produce a text file of the result (s), which may be imported to either a spreadsheet or word processing program.

NOTE: Your computer must have HyperTerminal capability in order to successfully complete this process.

09/02/98 08:32	
Samp	:131
Dil	:1:0
OutP	
OK	
TSS	35
COD	19
BOD	56
TOC	<5
NO3	<5
DBS	<5

PC configuration under Windows XP

- Click on « START », « PROGRAM », « ACCESSORY », « COMMUNICATIONS », and «HYPERTERM».
- Windows open a first window called « New connection Hyper terminal » and a second window called « DESCRIPTION OF A CONNECTION ».
- Choose the name and icon of this connection (bearing in mind the type of instrument which is your source of data) then « OK ».
- You'll see « DESCRIPTION » disappear to leave space to a new window called « Connection ». In the last windows "Connection by using" selects the COM number where the connecting cable is plugged. Validate « OK ».
- When « PROPERTY COMx » shows up, and you should feed the following information :
  Bits / second: 9600
  Data bit: 8
  Parity: none
  Stop bit: 1
  Flux control: none
  Then validate « OK ».
- Select « FILES », « PROPERTY », index « PARAMETERS ».

- Click on « ASCII Configuration ». Check that option « ADD LINE MODIFICATION AT THE END OF ENTERING LINES » is activated. Click on “OK” twice.

- To save the parameters, select « FILES » then « SAVE ». Windows register selected parameters under predefined name.

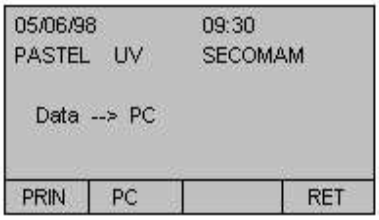
- To receive result file from the instrument, click on « TRANSFER » then « CAPTURE TEXT » menu.

- Windows opens a dialog box « CAPTURE TEXT ». Choose in which repertory you will save the data result file also under which name, either by entering the pathway or the name with « .TXT » extension, or by selecting « FOLLOW » icon.

  Type «Start» and your terminal will be on reception mode

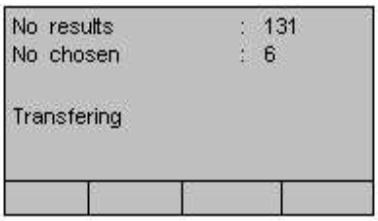
Configuration of the PASTEL-UV

- In order to select the method of export:



- Select “CONF”
- Select “PERI”
- Select “OTH”
- Select “OUT”
- Select “PC”

- Select “RET” four times to return to the main menu. From the main menu:

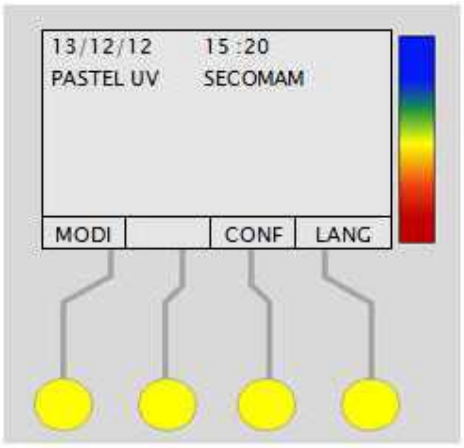


- Select “CONF”
- Select “RESU”
- Select “TRSF”
- Select “TRSF”

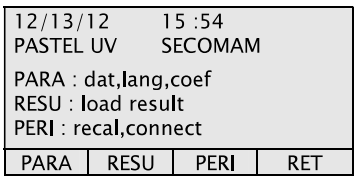
7.10 HOW TO MODIFY THE BASES/MODELS ON A PASTEL UV

Note: Bases = Models

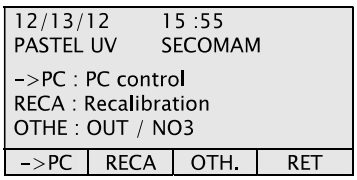
After the auto-test, the following screen appears:



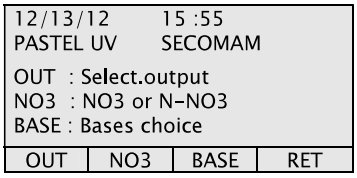
Click on « CONF »



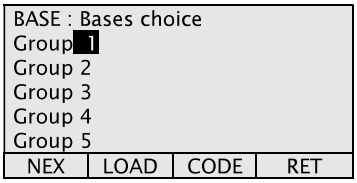
Click on « PERI »



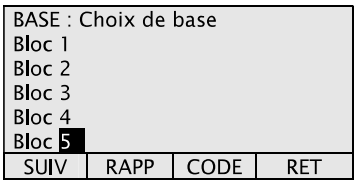
And click on « OTH ».



And click on « BASE »



English

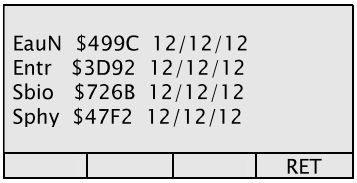


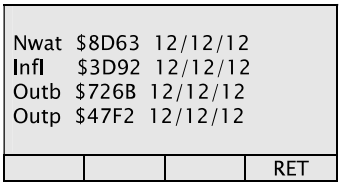
French

To change the Base press on « NEX » or « SUIV », using the keyboard

The GROUP or BLOC from 1 to 3 is in English, 4 and 5 are in French

Once the « GROUP » has been selected, press « LOAD » or « RAPP », using the keyboard, in order to download the base, then the following screen appears:





Click on return until back to the main menu

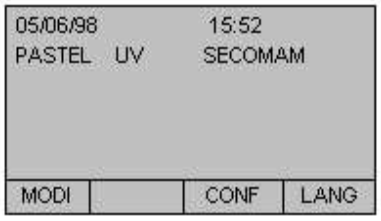
8 MODIFYING THE COEFFICIENTS

NOTE: Before any modifications are made, the user should verify and be confident in the "correct" results. These results are critical in determining the changes to be made to the instrument and if they are inaccurate, the PASTEL-UV readings will be compromised.

TIP: Decisions determining accuracy should be made only after a series of samples have been run and a history is established.

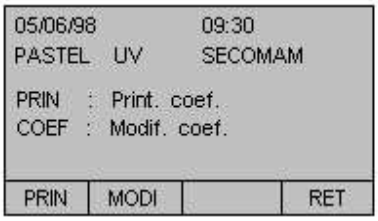
The PASTEL-UV contains internal parameters which will allow it to analyze a wide range of water types. In some situations, the user may notice that the waters which they are interested in analyzing yield results which are slightly higher or lower than those which may be obtained through other means. The user should carefully compare the "standard" method to the PASTEL-UV and decide if those results are indeed accurate. If it is decided that they are correct and the instrument is slightly off the desired norm for this sample type, the instrument does possess calibration coefficients which may be modified in order to produce optimal results.

From the main menu:

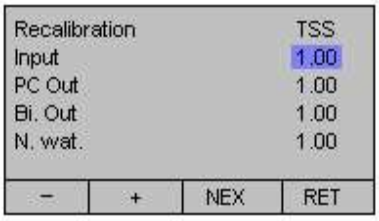


- Select "CONF"
- Select "PARA"
- Select "COEF"

NOTE: All of the coefficients are preset to 1.00. These values act as multipliers, so that the final result will be increased or decreased by this factor (i.e. changing the coefficient from 1.00 to 2.00 will double the final result).



- Select "MODI"



NOTE: The calibrations are grouped by parameter, so that the TSS coefficients are listed together for all four water types, etc. If scrolling is continued when the bottom of the screen is reached, the next set of coefficients will appear.

- Use the - and + keys to increase or decrease the highlighted selection
- Use the NEX key to scroll down the screen.
- Use the RET key to set the values and return to the previous screen.

9 RECOMMENDATIONS

The PASTEL-UV instrument does not require maintenance or particular recalibration. It is advisable to keep the instrument clean and free of chemicals and particles. The unit should be placed in its protective case during prolonged periods of disuse.

9.1 APPLICATIONS

The PASTEL-UV is equipped with software which permits the analysis of domestic, industrial and natural waters.

The measurement of the organic constituent of a wastewater provides :

1. A global indication of the quality of the water and the effectiveness of treatment.
2. A method of quantifying water quality.
3. A measurement of such parameters can be better made on site than in a laboratory; especially if it does not require a lot of time, sample preparation or operator training.
4. When evaluating a large number of sites, the portability of the instrument is particularly valuable.

9.2 OBTAINING SAMPLES

In order to achieve the best possible results, samples should be obtained in a manner that ensures they are representative of the site.

After a sample is obtained, a measurement should be made as soon as possible. If it is not possible to measure the sample quickly it can be stored for a maximum of 48 hours, at a temperature of 2 to 5°C . The sample bottle should be completely filled and sealed tightly. No additives or preservatives should be added.

TIP: In order to obtain the best results, the sample pH should be between 6 and 8.

The failure to properly store the sample will lead to the degradation of its components and inaccurate analysis.

9.3 CUVETTE CLEANLINESS

The cuvette should be cleaned at the end of every testing session.
The cuvette should be cleaned when changing water types.
For samples which are particularly viscous or high in particle content the cuvette should be cleaned after each sample.
At a minimum, the cuvette should be rinsed with distilled water between each sample and thoroughly cleaned every 5-10 samples.

CLEANING PROCEDURES:

1. Rinse with distilled water.
2. Rinse with alcohol (ideally acetone).
3. Flush several times with distilled water.
4. Wipe cuvette dry with Kimwipes or similar product designed not to scratch glass surfaces.
5. Repeat as necessary.

TIP: sample Running of ultra pure water will allow the user to determine if the cuvette is thoroughly clean and scratch free. Be sure to run both the 5mm and 10mm optical paths. The results should indicate no measurable values for any of the six parameters.

10 MAINTENANCE

10.1 LED / DIODE MEANING

State of the diode	*Meaning*
Normal green	*Battery charging*
Flashing red	*Powered by battery only*
Flashing green	*Battery charged*

Dysfunction	
Flashing green	*PASTEL UV connected to the mains* *- The battery is charged* *- The battery is considered as charged* *- Battery not detected because disconnected* *- Battery out of order* *- Electronic out of order*

10.2 POWER SUPPLY / CHARGING OF BATTERY

The management of the Ni-Cd battery is controlled automatically by the PASTEL-UV.

A new and fully charged battery will perform approximately 100 measurements before having to be recharged.

10.3 CHARGING

- Verify that the device is off.
- If the indicator light is red, the battery is not fully charged. Following connection to the power supply it will take approximately 12-15 hours to fully charge.
- Connect the transformer to the power supply and to the instrument. If the LED light is green, the battery is fully charged.

10.4 USING THE TRANSFORMER

If the PASTEL-UV is being used close to a source of power current, it is recommended to connect the transformer.

If the instrument is not connected to a power supply and the message “low battery” appears, connect the unit to a power supply and charge for 5 minutes before restarting - leaving the instrument connected to the power supply. The instrument can
be run while it is charging, with no ill effect.

Even with the batteries not charged, the results stored in the unit memory will be saved.

10.5 CARE OF THE SAMPLE CUVETTE

The cuvettes are precision manufactured from quartz. It is recommended that the user clean the cuvette immediately following use. It should be kept out of a corrosive atmosphere and the amount of time a sample is allowed to remain in the cuvette should be kept to a minimum.

TIP: It is recommended that each unit be purchased with a spare cuvette in case of an accident.
The cuvette should also be stored and handled in a manner which minimizes scratching of its surface.

10.6 CLEANING THE CUVETTE

The quartz used in the manufacturing of the cuvette is chemically very resistant. Only hydrofluoric acid will attack surfaces quickly. Inversely, it means that nearly all acidic or alkali solvents, including organic, can be used to clean it.

It is recommended to wash the cuvette using distilled (or ultra pure) water and alcohol (ideally acetone). The cuvettes should be rinsed with the distilled water, followed by acetone. For particularly viscous samples or those with high particle content, this process may be repeated.

Air drying should be sufficient if alcohol is used. Should additional drying be required, use a Kimwipe or similar none abrasive cloth.

Before every use check the cuvette to verify that it is clean and free of scratches.

10.7 RECALIBRATION

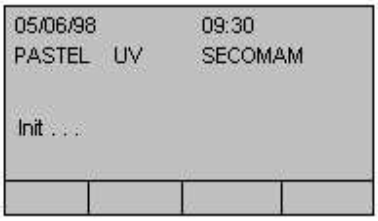
This operation serves to suppress errors due to the absorbency of the cuvette, particularly if the cuvette is scratched or damaged. **ONLY PERFORM THIS OPERATION WHEN ABSOLUTELY NEEDED - IF DONE INCORRECTLY, THE OPTICAL MEASUREMENTS WILL BE COMPROMISED AND THE INSTRUMENT WILL NOT FUNCTION NORMALLY. IF IN DOUBT, PLEASE CONTACT SECOMAM TECHNICAL SUPPORT.**

Before initiating this operation, you must wash the cuvette thoroughly two or more times in order to ensure complete cleanliness.

Following instructions on the screen, make a first measurement on air .

- Select “CONF”

- Select “PERI”
- Select ”RECA”



The next prompt will instruct the user to put a cuvette of distilled water into the unit at the 5 mm optical path.

NOTE: It is extremely important that the distilled water be pure. If there is a residue or component that absorbs UV light, the calibration will be faulty and the unit will produce erroneous results.

TIP: One way to check the quality of your water is to run it as a sample in the PASTEL-UV. Assuming that the instrument is running correctly, all the values should approach zero.

The final prompt will direct the user to change the optical path to 10 mm. This will complete the recalibration.

11 DEFINITIONS

INFLUENT
Untreated water entering a municipal waste water facility.

NATURAL WATERS
Essentially soft waters coming from rivers, lakes, underground waters, with a maximum salt concentration of 18%.

BIOLOGICAL TREATMENT
The treatment of waste water involving microbial activity.

PHYSICO-CHEMICAL TREATMENT
Physical (mechanical) and/or chemical treatment of waste water (i.e., screening, filtering, bleaching, etc.)

TOTAL ORGANIC CARBON (TOC)
Quantity of carbon present in the organic matter that is dissolved in water.

CHEMICAL OXYGEN DEMAND(COD)
Measurement of the oxygen equivalent of the organic matter content of a sample.

BIOLOGICAL OXYGEN DEMAND (BOD)
Molecular oxygen utilized during a specific incubation period for the biochemical degradation of organic material.

TOTAL SUSPENDED SOLIDS (TSS)
The portion of total solids retained by a filter.

SURFACTANTS (DBS - Dioctal Benzene Sulfate)
Surface agents having functional groups which ionize to negatively charge organic ions and produce surface activity.

12 ACCESSORIES

Reference: 0M8303
KYOLINIE printer with connection cable

Reference: 0X5764D
Connecting cable for computer

Reference: 0GQ203Z0
Quartz cuvette

Reference : 0M9009
USB connection cable PC (USB/9M)

Reference: 0I6621
10 thermal paper rollers for printer

Reference : 0M6409
Battery 12 V

Reference : 70MP0405
UV PRO - Windows software. Compulsory for industrial applications on PASTEL UV (Ref. 70MP0316). This software is compatible only with 32 bits operating systems

13 RS 232 OUTPUT

13.1 CONNECTOR

Female connector 25 pins

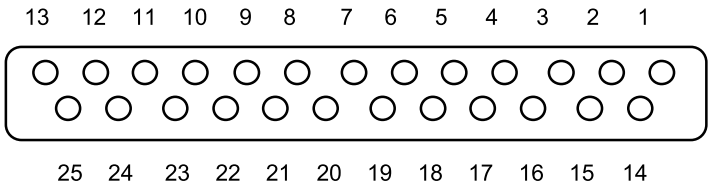


Fig 25 pins connector external view

1- Ground

2- RXD TERMINAL TOWARDS PASTEL UV

3- TXD PASTEL UV TOWARDS TERMINAL.

4- CTS TERMINAL TOWARDS PASTEL UV.

5- RTS
6- RTS
PASTEL UV TOWARDS TERMINAL.

7- GROUND

20- CTS TERMINAL TOWARDS PASTEL UV.

13.2 DATA

For data exportation, see «Exporting of results ».

DATA TRANSMISSION

Bidirectional – Speed: 9600 bps.

The analyzer awaits a signal with 10 V on pins 4 or 20 (CTS).

It is necessary that this signal is present at the RAZ of the PASTEL UV if not it will not activate the serial connection and will not send any data on pin 3 (TXD).

Pin 3 of the spectrophotometer is connected on pin 3 of the computer.

13.3 DATA FORMAT

1 START BIT - 8 S BITS - 1 STOP BIT - PAS DE PARITE

CR = CR +LF (Carriage return = Carriage return + Line feed).

Pour plus d'information, rendez-vous sur www.aqualabo-group.com

For more information, go to www.aqualabo-group.com

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