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BIO-SUN++ SYSTEM

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1. TECHNICAL CHARACTERISTICS

- The BIO-SUN software is designed to work with illumination in 312 and 365nm
- The wavelength is selected by the user

A/ BIO-SUN Unit :

↵ **Frequency of measures :**

- 4 measures / second

↵ **Range of measure (irradiance) :**

- Accuracy and linearity : $\pm 0,2 \%$
- Automatic change of range

↵ **Programming :**

- **Minimum quantity of programming : 11 mJ/cm²**
- Range of programming : 0,1 to 99,99 J/cm²
- Automatic change of range

↵ **Intensity :**

- UVA (365nm) : 5 mW/Cm²
- UVB (312nm) : 3 mW/Cm²
- UVA+UVB (365nm and 312nm) : 5,6 mW/Cm² in 365nm
3,2 Mw/Cm² in 312nm

ATTENTION: These values are given as an indication and can be subjected to the variations dependent on the tolerances.

B/ Sensors :

- Accuracy of the measure : $\pm 5\%$ (standard LNE)
- Linearity : $\pm 0,5 \%$
- Temperature Coefficient : $\pm 0,05 \%/^{\circ}\text{C}$ from 0 to 40°C

2. INSTALLATION AND CONNECTION

A/ Description :

Front side :

- 1 LCD display consisting of 4 lines of 40 characters
- 1 programmation keyboard
- 1 ON/OFF switch

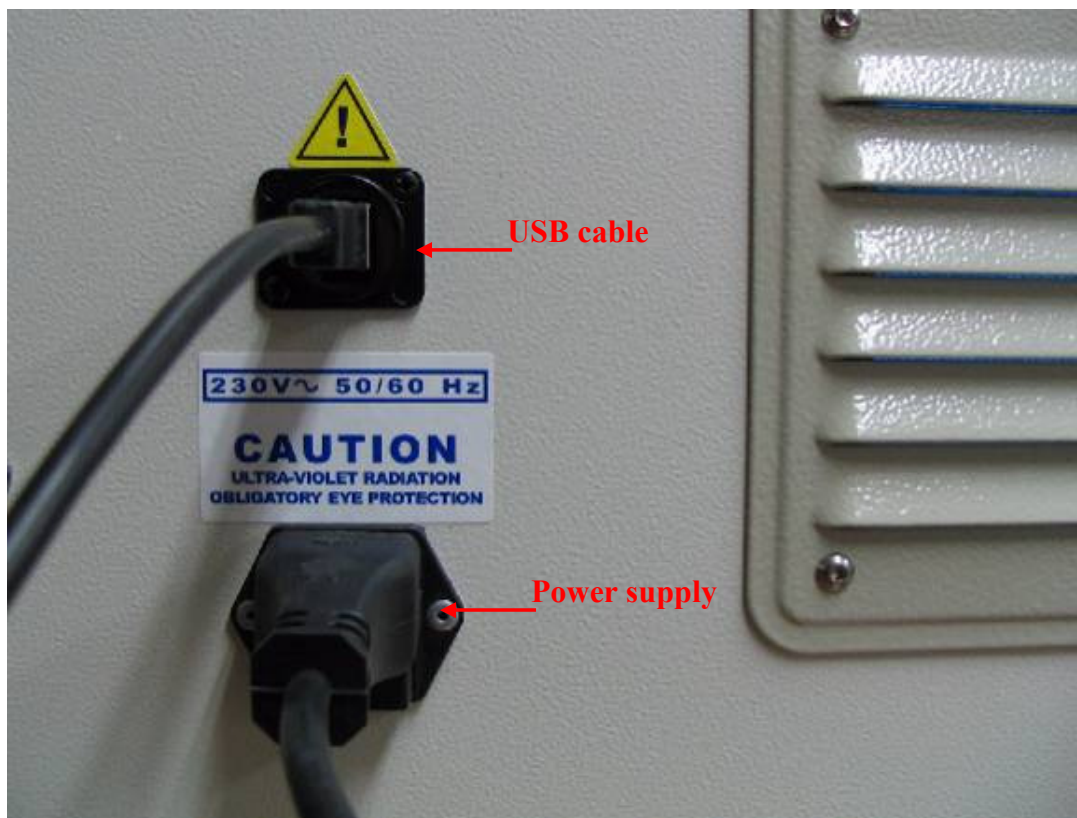
Rear side :

- 1 socket for power supply
- 1 output USB (optional)

B/ Installation :

Rear Side :

- Connect the cable to the power supply
- Connect the output USB (optional) to the computer with the cable USB



Front side :

- Press the ON/OFF switch

3. KEYBOARD DESCRIPTION

- Key "+" and "-" : to select the menu options
- Key "ENTER" : to validate a selection
- Key "RETURN" : to stop an irradiation or cancel a programmation
- Key "." : is the decimal point
- Key "0" to "9" : to program an irradiation value

4. EXAMPLES

A/ Selection of "STERILIZATION MODE" :

- BIO-SUN displays the following main menu, at the start-up or after an irradiation :

→ STERILIZATION PROGRAMMATION CYCLE

HELP :Select mode with <+> or <-> keys,
then press <Enter> to validate ...

- At the start-up, the key "→" is directly in position facing "Sterilization"
- After an irradiation, it the "→" is not facing "Sterilization", with the keys <+> or <-> move the key "→" to position "Sterilization", then validate with "Enter"
- Menu display

365 312 254

PROGRAMMATION MN: | | 10

HELP : Set time for tray sterilisation
then press <Enter> key to start.

- Press "Return" to delete "10" minutes, then enter your time.

Minimum time required is: 1min

Maximum time required is: 99min

- The control light corresponding to the 254nm UV sensor will light on

- Menu display :

365 312 254

STERILIZATION IN PROGRESS (9)

Help : Press <Return> key to stop process

- Return to main menu by pressing the key "Return".

→ STERILIZATION PROGRAMMATION CYCLE
HELP :Select mode with <+> OR <-> key,
<Enter> to validate ...

B/ Selection of "PROGRAMMATION MODE" :

- At the start-up or after an irradiation, BIO-SUN will display the main menu :

→ STERILIZATION PROGRAMMATION CYCLE
HELP :Select mode with <+> or <-> key,
<Enter> to validate ...

- With the key <+> or <->, move the key "→" to position "Programmation" mode

STERILIZATION →PROGRAMMATION CYCLE
HELP :Select mode with <+> or <-> key,
<Enter> to validate ...

- Validate with "Enter"

- Menu display :

	365	312	254								
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Prog</td> <td style="width: 33%;">J/cm²: →</td> <td style="width: 33%; text-align: center;"> </td> <td style="width: 33%; text-align: center;"> </td> </tr> <tr> <td colspan="4" style="padding-top: 10px;">HELP :Select the wavelength with <+> or <->, then press <Enter> to start ...</td> </tr> </table>	Prog	J/cm ² : →			HELP :Select the wavelength with <+> or <->, then press <Enter> to start ...						
Prog	J/cm ² : →										
HELP :Select the wavelength with <+> or <->, then press <Enter> to start ...											

- Depending on the UV sources selected, enter the "Programmation" instructions in J/CM² under the appropriate wavelength

C/ Example of programmation :

Minimum quantity of programming 10mJ/cm²

- 2,5 J/cm² in 365nm,
- Position the "→" under "365" and enter the instructions by pressing the key "2" "." "5"

	365	312	254								
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Prog</td> <td style="width: 33%;">J/cm²: → 2.5</td> <td style="width: 33%; text-align: center;"> </td> <td style="width: 33%; text-align: center;"> </td> </tr> <tr> <td colspan="4" style="padding-top: 10px;">HELP :Select the wavelength with <+> or <->, then press <Enter> to start ...</td> </tr> </table>	Prog	J/cm ² : → 2.5			HELP :Select the wavelength with <+> or <->, then press <Enter> to start ...						
Prog	J/cm ² : → 2.5										
HELP :Select the wavelength with <+> or <->, then press <Enter> to start ...											

For a combine programmation (365 and 312nm), enter the value (in J/cm²) in the 312 position. To move from 365 position to 312 position, use the key <+>.

- To modify an instruction in a wavelength, press the "Return" key, then enter the new instructions
- Press "Enter" to validate
- Menu display :

	365	312	254																
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">PROG</td> <td style="width: 33%;">J/cm²</td> <td style="width: 33%;">:2.500</td> <td style="width: 33%; text-align: center;"> </td> </tr> <tr> <td>ENERGY</td> <td>J/cm²</td> <td>:0.000</td> <td style="text-align: center;"> </td> </tr> <tr> <td>INTENSITY</td> <td>Mw/cm²</td> <td>:0.000</td> <td style="text-align: center;"> </td> </tr> <tr> <td>TIME</td> <td>HH:MN</td> <td>:99:59</td> <td style="text-align: center;"> </td> </tr> </table>	PROG	J/cm ²	:2.500		ENERGY	J/cm ²	:0.000		INTENSITY	Mw/cm ²	:0.000		TIME	HH:MN	:99:59				
PROG	J/cm ²	:2.500																	
ENERGY	J/cm ²	:0.000																	
INTENSITY	Mw/cm ²	:0.000																	
TIME	HH:MN	:99:59																	

- To stop the irradiation before the end of the programmation, press the "Return" key, and "Enter".



- At the end of the irradiation, BIO-SUN will display the following menu :

365 312 254

Prog	J/cm ² : 2.500		
ENERGY	J/cm ² : 2.500		
TIME	HH:Mn :		
Press on the <Enter> key to continue ...			

D/ Selection of "CYCLE" mode :

- The last programming in Joules remains stored in the memory and the "Cycle" mode allows for several irradiation to be performed using the same values
- When starting up or after an irradiation, BIO-SUN display the main menu :

➔ STERILIZATION PROGRAMMATION CYCLE
HELP :Select mode with <+> or <-> key, press <Enter> to validate ...

- With the keys "+" or "-" move the "➔" opposite the mode "Cycle"
- The following menu is displayed :

STERILIZATION PROGRAMMATION ➔CYCLE
HELP :Select mode with <+> or <->, press <Enter> to validate ...

- Validate with "Enter" key
- The following menu is displayed :

365 312 254

CONSIGNE	J/cm ² : 2.5		
HELP :Select wavelength with <+> or <->, <Return> to clear, <Enter> to start ...			

Values cannot be changed in CYCLE menu. They can be changed in PROGRAMATION menu.

- Validate with "Enter" key to start IRRADIATION

- To cancel, press on "Return" key and return to main menu

→STERILIZATION PROGRAMMATION CYCLE

HELP :Select mode with <+> or <->,
press <Enter> to validate ...

SENSORS CALIBRATION

VILBER LOURMAT council: the sensors must be recalibrated every year

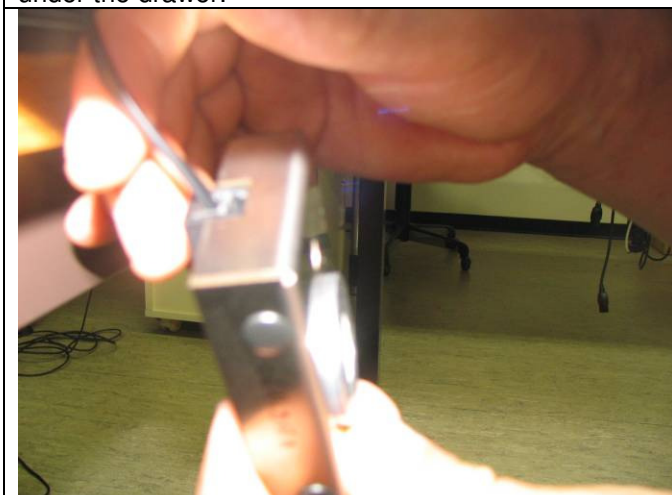
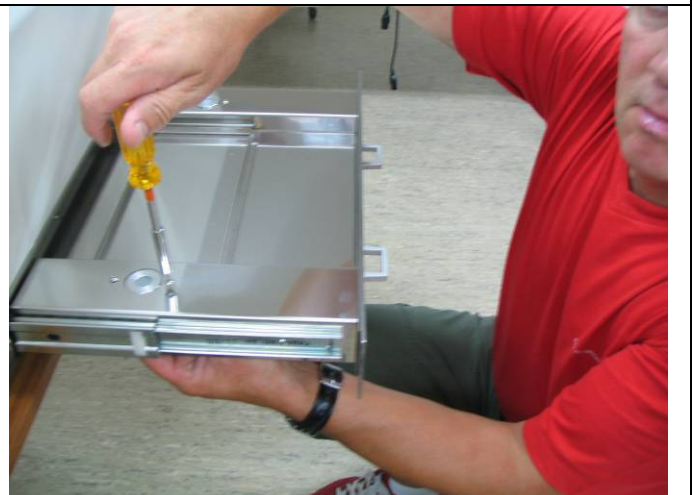
First, unplug the Bio-Sun. Ensure there is no electricity input



Open the drawer of the Bio-sun



Unscrew both screws around sensor, holding the sensor under the drawer.



Disengage the cable from the sensor connector.





Please take note of the sensor site in order to reposition correctly when re-assembling.
The 365nm sensor is on the left and the 312nm on the right. .

To re-assemble the instrument, follow these instructions starting by the last step.

IMPORTANT : Please ensure the proper working condition of the Bio-Sun only after a total re-assembly of the system.

CHANGING THE TUBES

- a/ Before any dismantling, unplug BIO-SUN
- b/ Unscrew the fixing screws of the rear side and make it rotate carefully on the side without pulling the wires
- c/ Unscrew the 4 screws of the lower reflector facing you. It is then possible to remove the tubes (a quarter turn will release them)
- d/ Install the new tubes exactly at the place designed for each wavelength (see position drawing fig. 1)
- e/ Screw to lower reflector, then the rear side of the machine

REPLACEMENT PARTS

Reference	Quantity	Watts	Description
T-30.C	1	30 W	Tube 254nm
T-30.M	2	30 W	Tube 312nm
T-30.L	4	30 W	Tube 365nm
FST-6.3A	2		Fuse 6.3A

1. SOFTWARE INSTALLATION

Computer Characteristics

- 100% IBM/AT compatible
- Hard disk 200 Mb or upper
- Disk drive HD 3 ½
- VGA screen 800 x 600 – 256 colors minimum
- PENTIUM microprocessor 75 MHz or upper
- RAM 8 Mb minimum
- 1 parallel port
- 1 USB port free
- WINDOWS 95

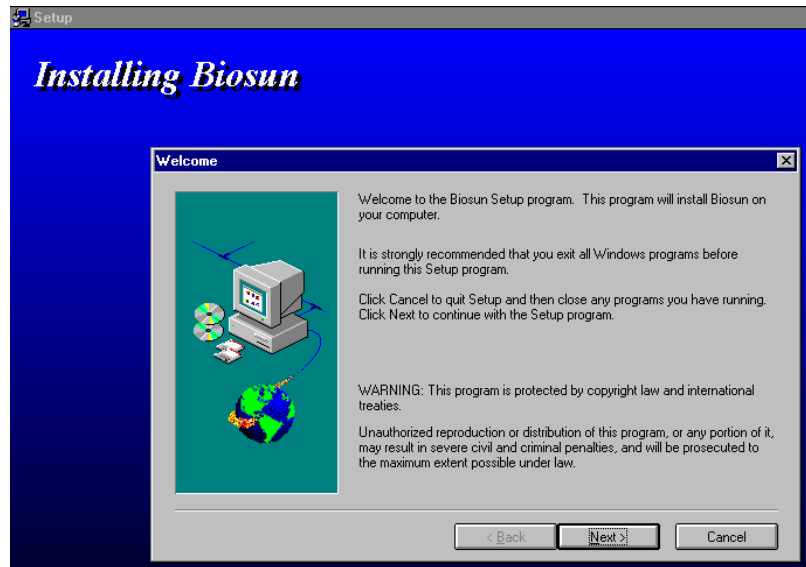
Connect the BIO-SUN to your Computer

- Plug the USB cable of the BIO-SUN unit to the computer
- Install the software as described

On Windows 95, click on the "Start" button and then on "Execute"

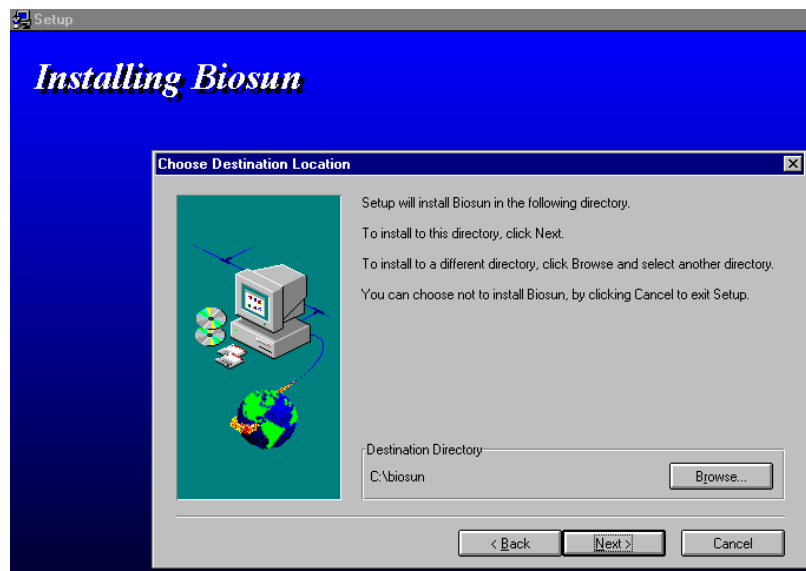
. in the dialog box "Execute" displayed, enter "A:SETUP" in the field "Open" and click on the "OK" button

The Welcome Menu is displayed :



. click on "NEXT" to continue installation

• ***Selection of the directory of installation***



The directory by default is displayed (BIO-SUN)

. click on "NEXT" to validate the selection

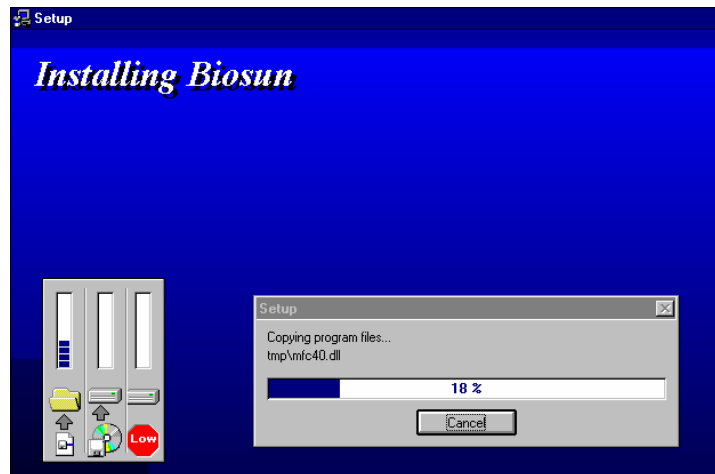
- **To modify the installation directory**

. click on "BROWSE" and select or create another directory

If the directory does not exist, the installation program will ask if it has to create it

. click then on "NEXT" button

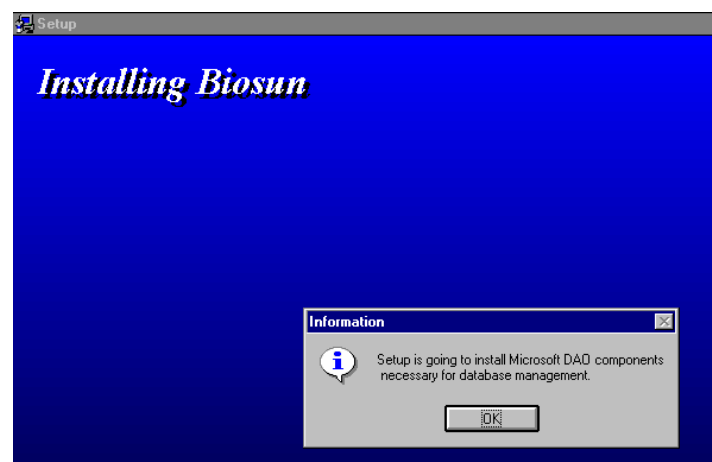
The program files are installed in the specified directory and the program group is created



The group BIO-SUN consists of the icon of the BIO-SUN software and of the icon of the deinstallation program

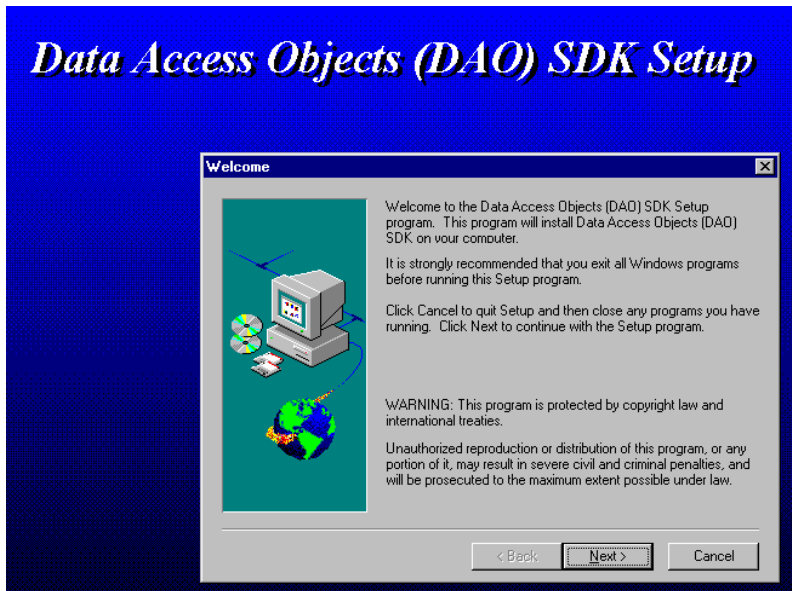
The "SETUP" program has also to proceed to the installation of elements necessary to the database management

The following dialog box is displayed :

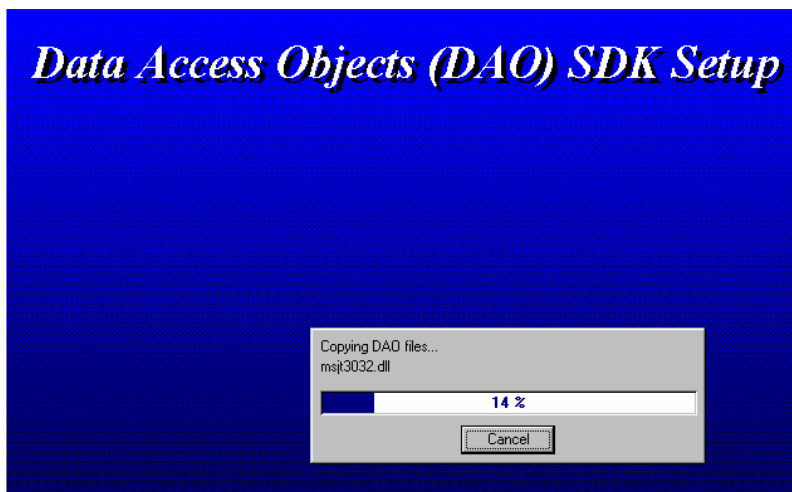


. click on OK to continue

Data Access Objects (DAO) SDK Setup

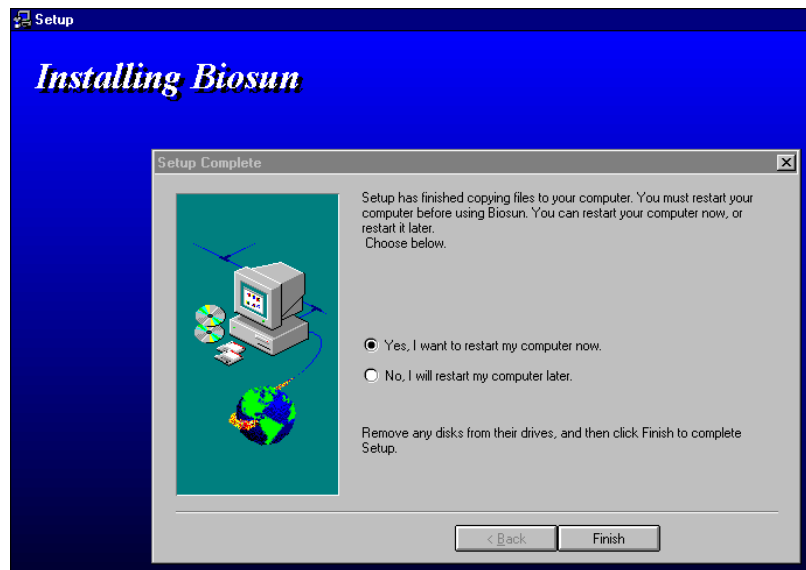


. click on "NEXT" to proceed to the copy of DAO files



Once DAO files installed, you have to reboot the computer in order to validate the new settings

Remove all floppy disk of the drive and then click on "FINISH" button on the following dialog box :



Once Windows has rebooted, double click on the program icon to run it

For Windows 95, it is also possible to select the "START" button in the task bar, to select then "PROGRAMS", the BIO-SUN group and the program BIO-SUN

BIO-SUN – Deinstallation

You may want to desintall the program from the hard disk

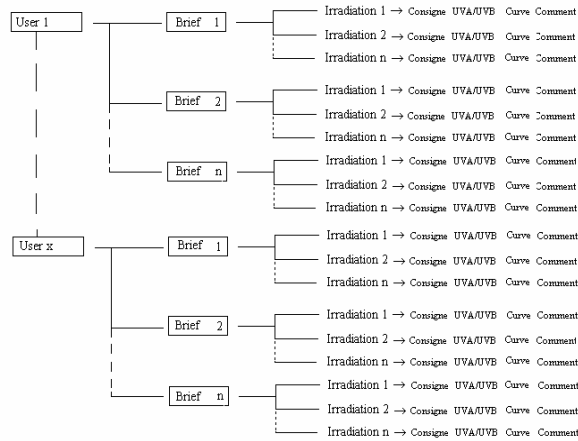
The UNINSTALLSHIELD program will do it for you :

- . click on "START" button
- . select "PROGRAM" option, then "BIO-SUN" group and click on the icon "Uninstall BIO-SUN"
- . answer "YES" to the question, the program group and programs themselves are deleted
- . click on "OK" to finish the deinstallation of BIO-SUN

2. HOW THE SOFTWARE WORKS

BIO-SUN allows file storage of irradiations following several criteria :

Principle of data organization in Biosun



- **By user (999 possible) :**
 - a user can be one person or a group a persons
- **By document (99 999 possible) :**
 - each user can create up to 99 999 documents

	UVA 365 nm	UVB 312 nm
Consigne (J/cm²)	0.000	0.000
Received Energy (J/cm²)		
Max Illumination (mW/cm²)		
Time (HH:MM:SS)	0:0:0	0:0:0
Maximum Temp. (°C/°F)		
Minimum Temp. (°C/°F)		

The typical case for the use of a document is when a company has to do a list of experimentation in order to study a phenomenon.

One given company can be defined in several documents if it has asked for several different lists of experimentation

Each document can contain several irradiations. Each irradiation may have a UVA(365 nm) irradiation and/or a UVB(312 nm) irradiation (curves and data). Each irradiation can have its specific comments

Screen for the document edition is displayed as follows

The screenshot shows a form for document edition with the following fields:

- Date: 10-07-1997
- Reference: your reference number
- Document: 00001 (dropdown menu)
- Client: client company name
- Client Code: 123456
- Address: first client address line, second client address line
- Town: Town
- P.O. box: 55102300
- Country: Hong Kong

Document editor field :

BIO-SUN has an internal reference (document number) it cannot be modified. It is possible to add your own customers references in the field "Reference"

Fields concerning irradiation :

The screenshot shows the irradiation control interface with the following sections:

- Sterilization:** Time of sterilization: 0, Sterilisation button, Irradiation button, Stop button.
- Results:** UVA 365 nm, UVB 312 nm
- Order (J/cm²): 0.000
- Received Energy (J/cm²):
- Max Illumination(mW/cm²):
- Time (HH:MM:SS): 0:0:0
- Maximum Temp. (°C/°F):
- Minimum Temp.(°C/°F):
- Support: Qty:

Grayed fields are read only : they display data calculated by BIO-SUN software

Fields that can be modified by the user are :

- The "Time of Sterilization " : the values are entered in minutes (from 5 to 99 minutes)

The "Sterilization" button is activated when a valid value is entered. Sterilization in an optional function

- The "Sterilization" button enables to launch the order of sterilization with the time value defined previously
- Fields "Order" (UVA and UVB) : Values are entered in Joules/cm². When a correct value is entered, buttons "Irradiation" and "Stop" are activated
- "Irradiation" button : triggers the irradiation with the order values entered
- "Stop" button : allows an "emergency stop" of the irradiation
- Fields "Support" and "Qty" : allow to enter on what kind of material has been made the irradiation and in what quantity
- Folder "UVA/UVB" allows to select what kind of curve is to be visualized : Irradiation curve is displayed in the folder
- The white area allows to visualize the comments, if they exist

3. HOW TO MAKE THE FIRST IRRADIATION

This chapter will help you to make your first irradiation in order to be familiarized with the BIO-SUN functions

3.1 Launching the software

In the BIO-SUN, double click on the icon BIO-SUN

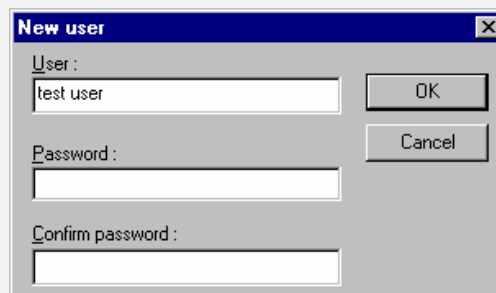


or

- . click on the "START" button of the task bar, select option "PROGRAMS" and then the group "BIO-SUN"
- . click on "BIO-SUN" to launch the software

For the first utilisation, you will have to define a new user

The following dialog box is displayed :



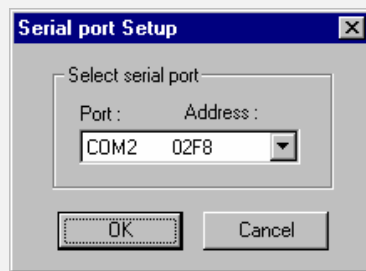
Type the username and, if necessary the password. Then click on "OK" to continue

Serial port selection :

You will have also to select the serial port to use to connect to the BIOSPECTRA unit

Go to the "Configuration" menu, select "serial port"

The following dialog box is displayed :



- . click on the down arrow to display the list of selectable ports
- . select the port you want, then click on "OK"

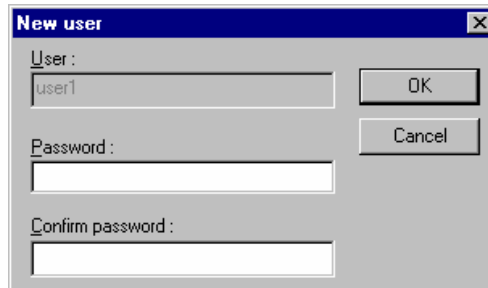
If you get an error message, the port you have selected does not exist or is already used by the system

Try another port

3.2 Definition of a user :

For the first utilization of the software, no database user is defined. You will be able to access to the different functions of the software only if a user is defined

BIO-SUN, will display the following dialog box :



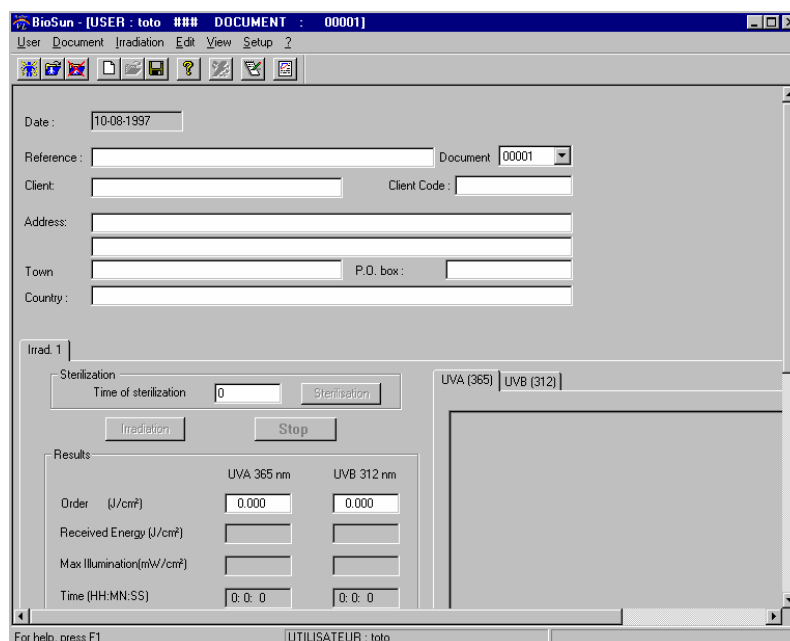
The 'New user' dialog box contains three input fields: 'User:' with the text 'user1', 'Password:', and 'Confirm password:'. To the right of the 'User:' field is an 'OK' button, and below it is a 'Cancel' button.

. enter the user name (here "Test user")

If the access to the database has to be password protected :

- . enter the password in the field "Password" and confirm it in the second field
- . click on OK to validate the new user defined

The main screen is then displayed



The main screen of the BioSun software shows a menu bar (User, Document, Irradiation, Edit, View, Setup, ?) and a toolbar. The main area contains several input fields: Date (10-08-1997), Reference, Document (00001), Client, Client Code, Address, Town, P.O. box, and Country. Below these is the 'Irrad. 1' section with 'Sterilization' controls (Time of sterilization: 0, Sterilisation button) and 'Irradiation' (Irradiation, Stop buttons). A 'Results' table is also present:

	UVA 365 nm	UVB 312 nm
Order (J/cm²)	0.000	0.000
Received Energy (J/cm²)		
Max Illumination(mW/cm²)		
Time (HH:MM:SS)	0:0:0	0:0:0

The status bar at the bottom shows 'For help, press F1' and 'UTILISATEUR : toto'.

3.3 Definition of a customer :

If necessary, fill the fields with the coordinates of the customer that asked for the irradiation

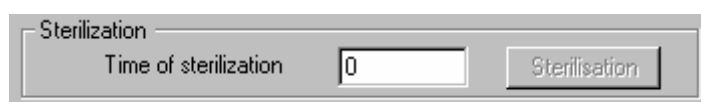
It will not be possible to modify the customers data after the first irradiation has been made

3.4 Definition of the first irradiation :

Enter the kind of material and its quantity in the fields "Support" and "Qty Those values must be defined before launching the irradiation :

It will not be possible to modify them thereafter

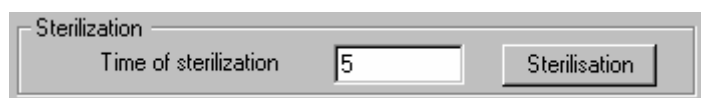
B/ When the sterilization of the support is required :



The screenshot shows a control panel titled "Sterilization". It contains a label "Time of sterilization" followed by a text input field containing the number "0". To the right of the input field is a button labeled "Sterilisation".

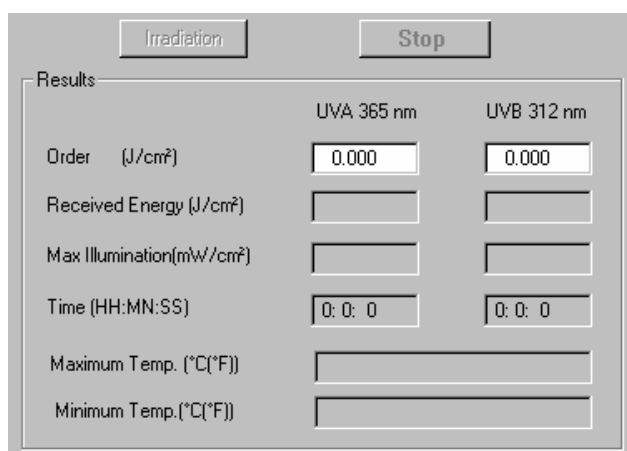
. enter the Time of sterilization in minutes (5 to 99 minutes)

The "Sterilization" button is activated when a valid time is defined



The screenshot shows the same "Sterilization" control panel as above, but the text input field now contains the number "5". The "Sterilisation" button is now visible and appears to be active.

B/ Definition of UVA and/or UVB orders :



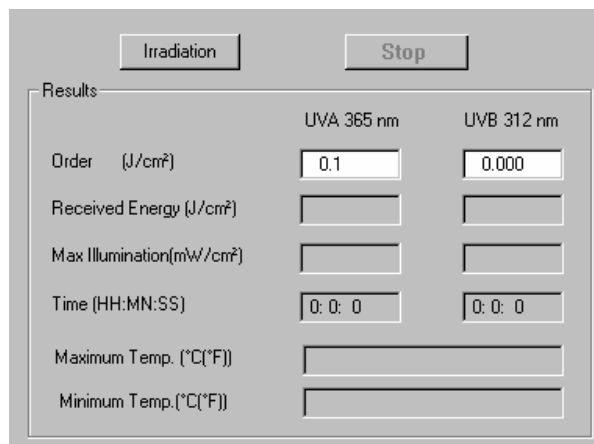
The screenshot shows a control panel with two buttons at the top: "Irradiation" and "Stop". Below these is a section titled "Results" which contains a table with two columns: "UVA 365 nm" and "UVB 312 nm". The rows in the table are:

	UVA 365 nm	UVB 312 nm
Order (J/cm ²)	0.000	0.000
Received Energy (J/cm ²)		
Max Illumination(mW/cm ²)		
Time (HH:MN:SS)	0: 0: 0	0: 0: 0
Maximum Temp. (°C(°F))		
Minimum Temp.(°C(°F))		

. enter the values of energy (Joules/cm²) for the wavelength(s) desired in the "Order" field(s).

It is possible to define only one order. Values cannot be under 1 milliJoule/cm²

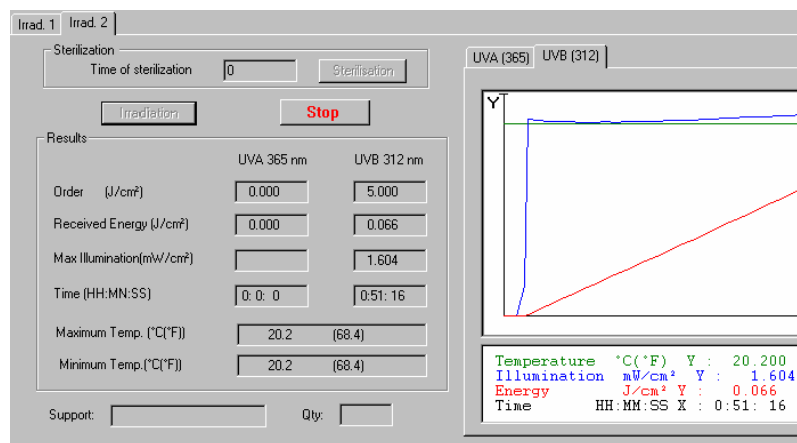
As soon as one of the order is correct, the "Irradiation" button is activated



C/ Launching the irradiation :

. click on the "Irradiation" button to begin the irradiation

During the irradiation, data displayed on the screen are automatically refreshed :



Field "Received Energy" : Summation of the energy received by the sensor for a given wavelength

"Max. Illumination" : Maximum illumination for a given wavelength

"Time" : During the irradiation, estimated remaining time for a given wavelength

"Maximum Temp." and "Minimum Temp. " : Temperature in Celsius degrees (in parenthesis in Fahrenheit degrees)

The irradiation will automatically stop when the received energy reaches the order value

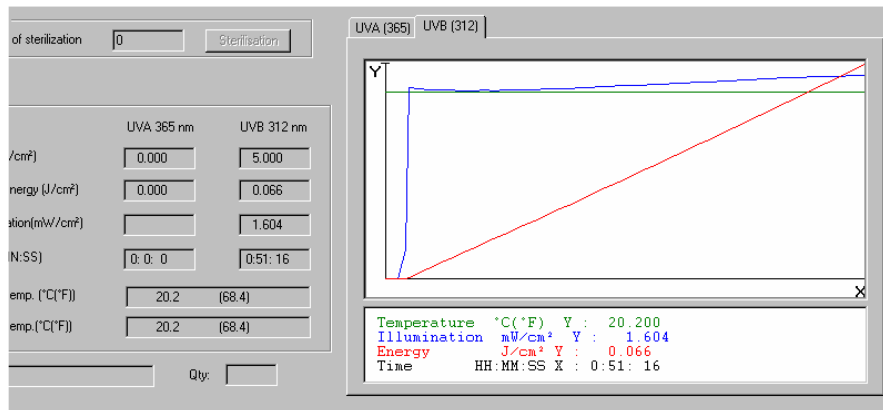
If the UVA and UVB orders has been defined, the irradiation will stop when conditions defined by the last order are satisfied

NOTE : **Emergency stop of the irradiation**


 . click on the "Stop" button to abort the current irradiation

Visualization of irradiation data :

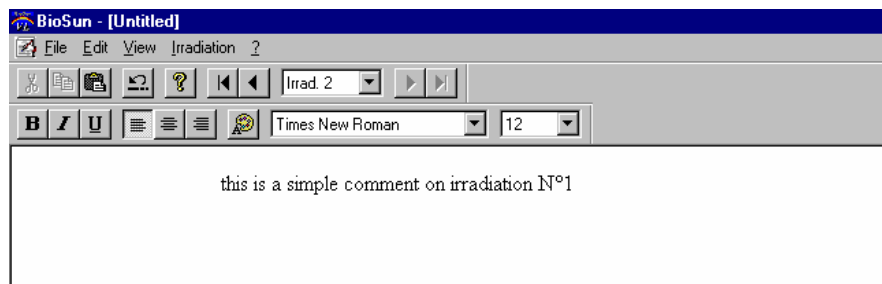
Once the irradiation finished, click on the UVA (365) or on the UVB (312) folder and move the mouse cursor on the irradiation curve area : a black line shows the mouse position and data corresponding to its position on the curve are displayed in the edition field under the curve



D/ Definition of comments for an irradiation :

. click on the icon  or select the option "Comments Editor" in the "Edit" menu

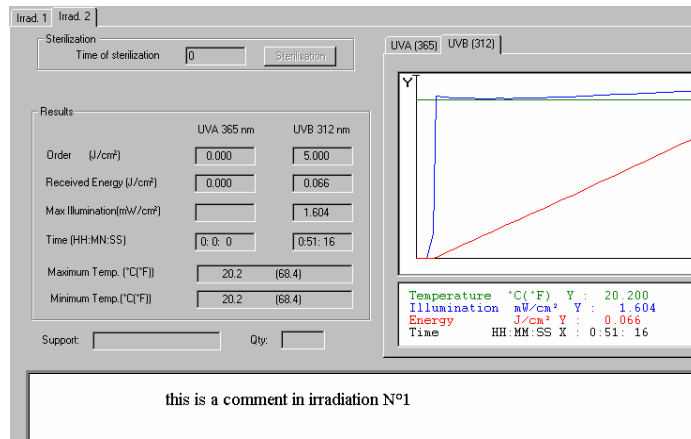
The comments editing page is displayed :



. enter the comments of the current irradiation like as in a word processor

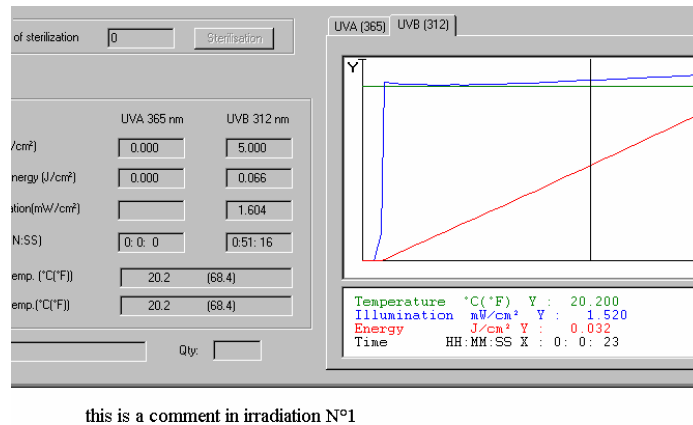
For more details on the functions of the comments editor, please see the chapter "HOW TO USE THE SOFTWARE-Irradiation-How to edit comments on irradiation"

Select the option "Close" in the "File" menu to exit the comment editor



Comments entered in the comment editor are displayed under the irradiation data


E/ Definition of a second irradiation for the same document :



. click on the icon  when activated (no new irradiation already defined) or in the menu "Irradiation" click on "New".

A folder "Irrad 2" is created, proceed as described for "Irrad 1" to do another irradiation

F/ Definition of a print out report :

. click on the icon  or select the option "Print out Editor" in the "Edit" menu

For more details on the functions of the print out editor, please see the chapter "HOW TO USE THE SOFTWARE-Irradiation-How to create a print report and to print out an analysis"

4. HOW TO USE THE SOFTWARE

This chapter will detail the different functions available in the software

Three levels will be described :

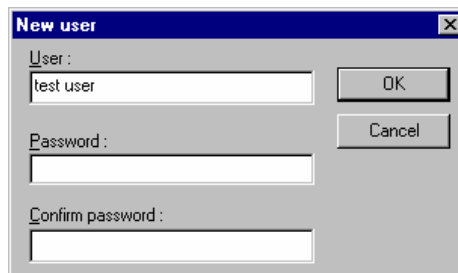
- Management of users registered in the software
- Management of documents created for a specific user
- Management of irradiation for each document

4.1 User

A/ How to define a user

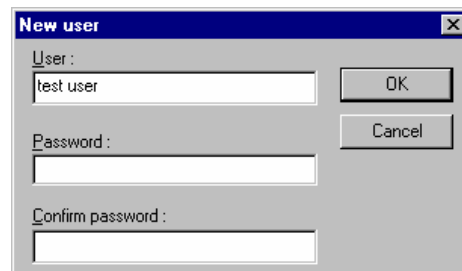
- **First utilization of the software :**

BIO-SUN is delivered without predefined user, during the first use the following dialog box will be displayed



- **Once BIO-SUN launched or if user(s) has already been defined**

. click on the icon  or select the option "New" in the "User" menu. The "New user" dialog box is displayed



In both cases, enter the user name (here "Test User")

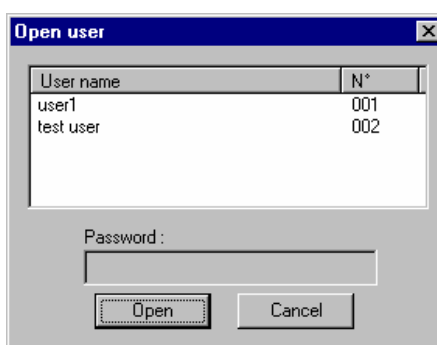
- **If the data access has to be password protected :**
 - . enter the password in the "Password" field and confirm it
 - . click on OK button to validate the new user defined

The new user becomes the current user


B/ How to Open/Close a user's file :

Opening a user's file when launching BIO-SUN :

If the user has already been defined, the following dialog box is displayed



Opening a user's file during utilization of BIO-SUN :

- . click on the icon  or select the "Open" option in the "User" menu

In the both cases, click on the desired user, enter the password if necessary :

It is now possible to visualize user's documents

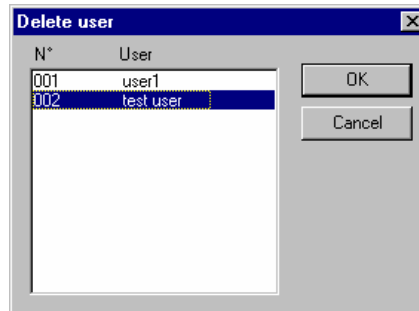
Note : You cannot open two user's documents at the same time : the opening of documents of a user will automatically close those of the previous user

Closing a user's file :

- . click on the icon  or select the option "Close" in the "User" menu

C/ How to delete a user :

Once the software launched, select the "Delete users" option in the menu "User"



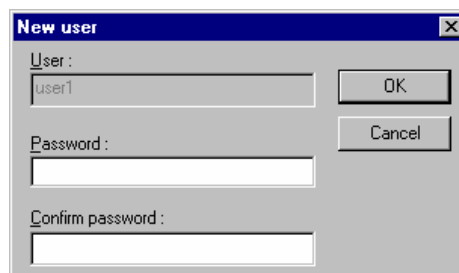
The "Delete users" dialog box is displayed

- . Select the user to delete and click on OK. After having confirmed the deletion, data are definitely erased of the program

Note : It is not possible to delete the data of the current user
You must close the user data file before trying to delete it

D/ How to modify the user's password

Once the user's data loaded, select the option "Modify password" in the "User" menu




- . enter the new password in the first field and confirm it in the second one
- . click on OK to validate the new password

4.2 Analysis document

The analysis document management is possible only if a user has been selected before

A/ How to define a new analysis document :

As soon as a user is defined, a new empty document is created and selected as the current document

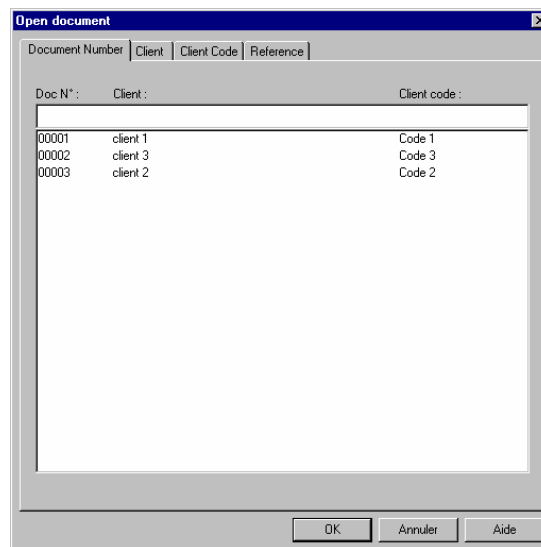
It is also possible to create new documents by clicking on the  icon or by selecting the option "New" in the "Document" menu

B/ How to open a document :

First Method

. click on the  icon or select the option "Open" in the "Document" menu

The list of documents already defined for the current user is displayed :



The folders allow to determine the sorting criteria of the list :

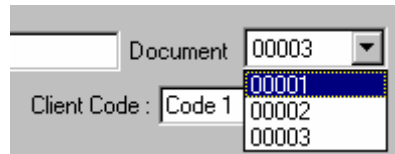
It can be displayed by order of document number, by customer, by customer code or by reference

The selection of the kind of sort is made by clicking on the folder corresponding to the desire sort

. click on the document to load to select it and click on "OK" button on the bottom of the dialog box to load it


Second Method

In the main screen of BIO-SUN, click on the down arrow on the right of the edition field of the document : the list of available documents is displayed



- . click on the document number to load

C/ How to save a document :

- . click on the  icon or select the option "Save" in the menu "Document"

D/ How to close a document :

In the menu "Document", select the option "Close"

E/ How to fill a document :

The filling of a document is made as following :

- . click in the white rectangle corresponding to the data to enter or to modify
- . type the data with the keyboard

Note : The document number is a BIO-SUN reference, it is not possible to modify it

It is possible to use the fields "Reference " and "Customer code" to enter your own specifications

4.3 Irradiation

For a given document, it is possible to manage several different irradiations

There will be as many "Irrad. x" folders as irradiation made

An Irradiation consists of :

- A time for sterilization of the support (optinal)
- One or two irradiations order(s) (UVA, UVB)
- Irradiation parameters (if the irradiation has been made) :
 - Received energy (equal to order when irradiation has finished)
 - Maximum illumination (UVA, UVB)
 - Time of irradiation (UVA, UVB)
 - Maximum and minimum Temperature
- Material and quantity irradiated
- Illumination curve (UVA or UVB)

It is possible to visualize any irradiation : click on the corresponding folder to display data

A/ How to define a new irradiation :

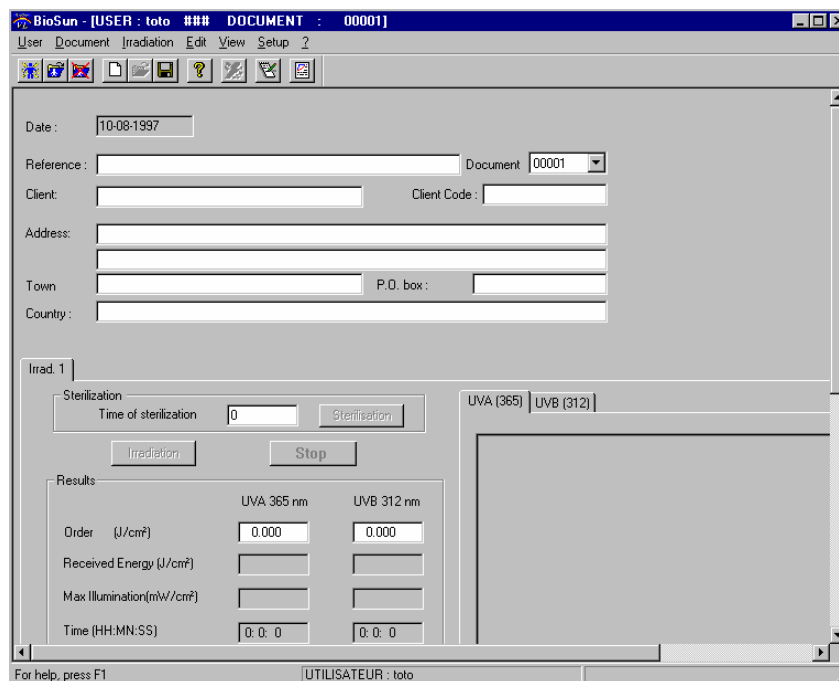
It is not possible to define several new irradiations at the same time. The previous irradiation must have been finished before you can create a new one

A new irradiation folder is determined by the display of "Irradiation" and "Stop" button

If those buttons are not displayed on the last folder :

. click on the  icon or select the option "New" in the menu "Irradiation"

The new irradiation folder is displayed :



If the support has to be sterilized :

. enter the time of sterilization (5 to 99 minutes), the "Sterilization" button is activated

. click on the "Sterilization" button to launch and apply the defined order

The irradiation will automatically stop when the time has run out

. enter the kind of material and its quantity

. enter the irradiation orders for UVA and/or for UVB in the field "Order"

The button "Irradiation" is activated as soon as a valid value is entered

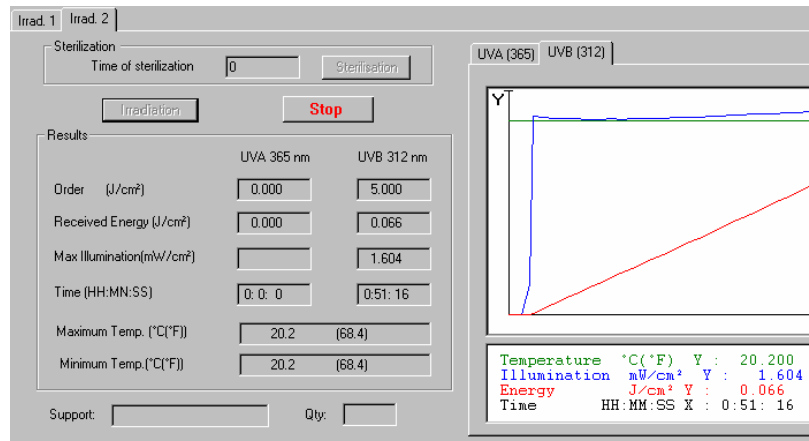
. click on the button "Irradiation" to apply the defined order(s)

The irradiation automatically stops once all the defined orders are satisfied

It is possible to abort the current irradiation by clicking on the "Stop" button. This button is activated once the irradiation begins

During irradiation, data displayed are refreshed in the fields under irradiation orders as well as the curves

It is possible to visualize UVA or UVB curve during irradiation by clicking on the corresponding folder (on the top of the display area)

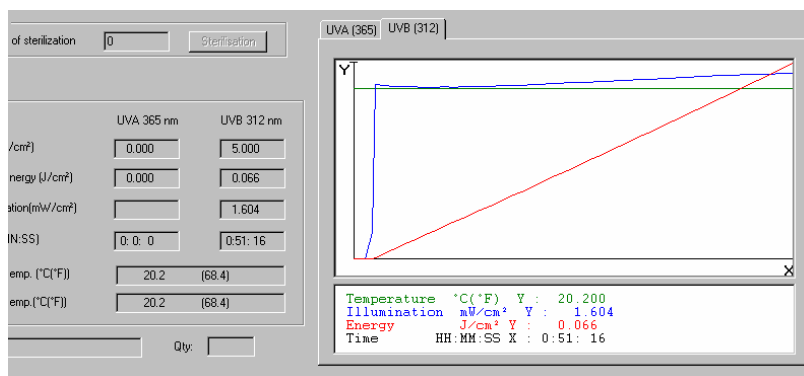


Note : During the irradiation, the field "Time" displays the remaining time for the irradiation

Once the irradiation is finished, the same field displays the total irradiation time

B/ How to visualize an old irradiation :

- . click on the folder corresponding to the irradiation to visualize ("Irrad x") : data are automatically displayed
- . move the mouse cursor on the curve area to visualize irradiation data




The black line shows the mouse position and data corresponding to the position on the curve are displayed in the edition field under the curve

C/ How to edit comments on irradiation :

Comments can be entered for each irradiation

Once they have been entered with the comments editor, they are displayed in the white rectangle under the irradiation data

. click on the  icon or select the option "Comments editor" in the menu "Edit"

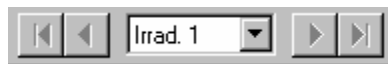
The comment editor is displayed :



The comments editor is like a word processor

The different functions are :

Selection of the irradiation to comment :



The current irradiation to comment is displayed in the white rectangle

C. 1/ Selection of an irradiation :

First Method

- . click on the down arrow to display the list of irradiations available in the current
- . click on the irradiation name to select for comments edition

Second method

- . click on the left arrow to select a previous irradiation (the left arrow with a line returns to the first irradiation

or

- . click on the right arrow to select next irradiation (the right arrow with a line goes to the last irradiation)

C.2/ Enter a comment :

- . click on the white page, the text edition cursor blinks
- . enter the text you want like as any word processor

C.3/ Selection of a font, its size

- . click on the bottom arrow of the field "Font" to display the list of available fonts
- . click on a font in the list to select it

Font size selection : proceed like as for font selection (Field "Size")

CAUTION : the available font sizes may vary regarding the selected font
--

The modification on font or font size will be applied to the characters entered after modification




It is therefore possible to modify an already typed text :

- . move the mouse at the beginning of the word to modify
- . click with the left mouse button and, while keeping the left mouse button pressed, move the mouse to the end of the area to modify
- . release the mouse button when all the text to modify is selected

comment text

Select the new font or the new font size, the selected text is then modified

C.4/ Modification of the police mode :

- . click on the  icon to enter text in Bold
- . click on the  icon to enter text in Italic
- . click on the  icon to enter text in Underlined

C.5/ Selection of text color :

The color modification is applied to the text entered after the selection of the new color

To modify the color of a text already entered, proceed as described for font size modification :




- . click on the  icon and select the desired color in the list displayed

The selected texts and the new text will be displayed with the new text color

C.6/ Modification of the text alignment :

The modification of the text alignment mode will be applied to the text entered thereafter

Select the text to modify like as described for font modification and proceed as following :


- . click on the  icon to left align text
- or
- . click on the  icon to center text
- or
- . click on the  icon to right align text


C.7/ Cut or Copy an object in the Windows clipboard :

The Cut/Copy functions allow to transfer the text selected in the comments editor to the Windows clipboard

This may be useful to transfer data from the BIO-SUN software to other software


Select the data to transfer like as previously described in the paragraph C.3

. click on the  icon or select the option "Cut" in the menu "Edit" to delete the selected items in the page and transfer them in the Windows clipboard

. click on the  icon or select the option "Copy" in the menu "Edit" to copy the selected items in the page and transfer them in the Windows clipboard

C.8/ Copy something from the Windows clipboard :

The comments editor can get images or texts contained in the Windows clipboard

. click on the  icon or select the "Paste" option in the menu "Edit" to insert the Windows clipboard's contents at the position of the text cursor

If the Windows clipboard contains several kinds of documents (image, texts, video sequences), the "Paste" function will only consider the text part. Use the function "Special Paste" in the menu "Edit" to get the other kinds of documents :

. in the menu "Edit", select the option "Special Paste"

. select the kind of contents to be inserted in the page of the comments editor

C.9/ Delete the last action :

. click on the  icon or select the option "Undo" in the menu "Edit"

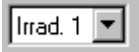
D. How to create a print report and to print out an analysis :

Once the irradiations and comments defined, it is possible to design a print out report with all or a part of the irradiation data. The defined print out model can be stored on hard disk and be re-used for another analysis : the fields will be at the same place, only the data will be different

To print out all data of an irradiation document, you just have to determine the layout for one irradiation

During the print out the layout will be applied to all others selected irradiations

D.1/ Reference irradiation selection :

. click on the down arrow in the field , select the irradiation in the list displayed :

. all the data of the displayed irradiation during print out layout will make reference to this irradiation

It is possible to modify the selection of irradiation during the layout

D.2/ Print out layout :

The print out layout consists on the definition of several data display areas

Those data may be text, images, comments and components allowing you to enhance the quality of your presentation

D.2.a/ Generalities :

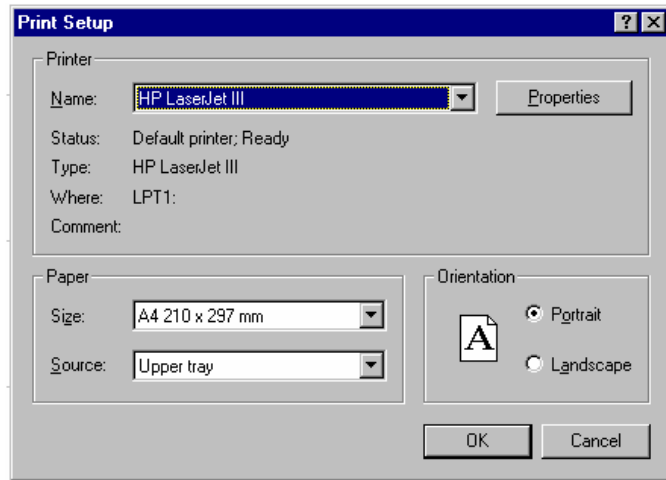
PRINT OUT SIZE

The documents designed in the print out editor are print oriented documents

The size of the view displayed in this function is equivalent to the printable area of the printer defined on your computer (option "Printer setup" of the "File" menu)

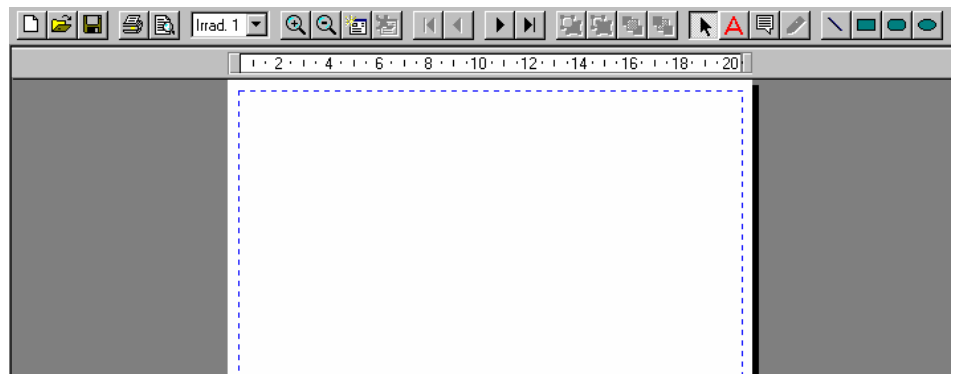
If no printer is defined on your system, the size by default of the layout page is an A4 (210X297 mm)

- click on the option "Printer setup" of the menu "File" to modify the size and orientation of the view



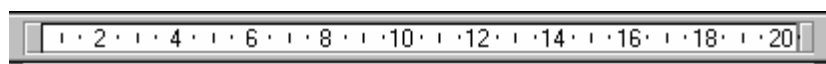
Most of the printers cannot use the whole paper area, there is a non printable area around the page

This area is visualized on the page with a blue dotted line



RULE

The printable size and margins are displayed in a rule on the top of the page. The unit for the graduations is the centimeter, it is possible to select another unit in the menu "View", option "Options"

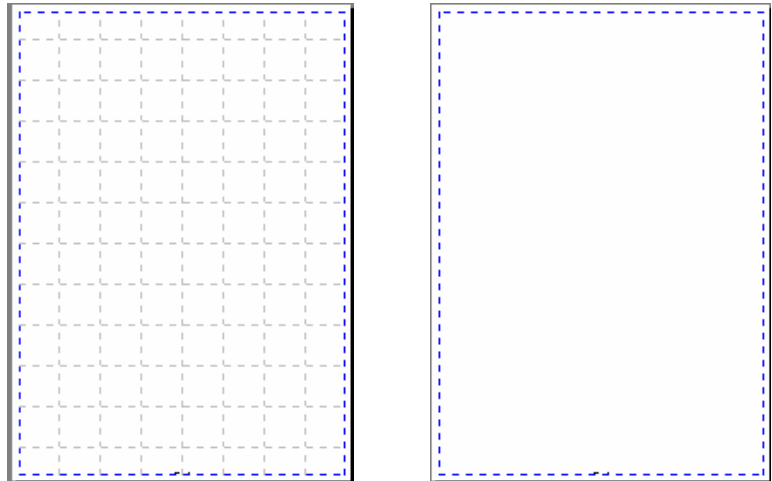


DEFINITION OF A GRID

In order to position properly the elements in the page, a grid can be displayed. It will not be printed out

In the menu "View", select the option "Grid" to display it

To cancel it, select the "Grid" option once again



BACKGROUND COLOR OF THE PAGE

The background color by default is white

. click on the menu "View" and select the option "Paper color" to modify it



. click on the desired color and validate the selection by clicking on OK button

DEFINITION OF SEVERAL PAGES

The print out editor can manage several pages

During the layout of a new report, an empty page is created at the first position. It is then followed by all the comments pages that the user may have entered in the comments editor

Add a new page

. click on the "Pages" menu and select the option "Insert a report page" to insert a new empty page just before the pages of comments

or

Select the option "Insert a report page at the beginning" in the menu "Pages" to insert an empty page at the first position

or

Select the option "Insert a report page at the end" in the menu "Pages" to insert an empty page after the comments pages

Delete a Page

It is not possible to delete comments pages

. click on the menu "Pages", select the option "Delete current page"

Moving from one page to another

. click on the menu "Pages" and select the option "Previous page"

or

. click on the  icon

. click on the menu "Pages" and select the option "Next page"

or

. click on the  icon

. click on the menu "Pages" and select the option "First page"

or

. click on the  icon

. click on the menu "Pages" and select the option "Last page"

or

. click on the  icon

Moving to a specific page

. click on the option "Go to page" in the page menu and entered the desired page number

. click on the OK button to validate the selection

ZOOM OF THE DOCUMENT



. click on the first icon or select the option "Zoom in" in the menu "Page" to enlarge the view

. click on the second icon or select the option "Zoom out" in the menu "Page" to minimize the view

CREATION OF ANOTHER PRINT OUT REPORT

. click on the icon  to erase the current report and to create a new one

D.2.b/ Insertion of elements in the print out report :

DEFINITION OF TEXT

. click on the icon  and move the mouse cursor on the page

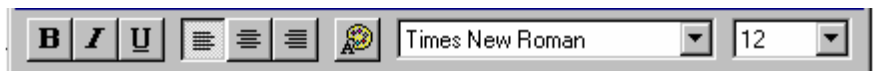
. click with the left mouse button on the top left corner of the text edition area

While keeping the left mouse button pressed, move the mouse to the bottom right corner of the area

Release the mouse button when the area is satisfactory

The text cursor blinks in the top left corner of the area

The text toolbar is displayed



Enter the desired text

It is possible to modify the text characteristics with the text toolbar :

 When this icon is clicked, on all the selected text and the entered text is displayed in Bold

. click once again on it to return to "Normal" text




 When this icon is clicked, on all the selected text and the entered text is displayed in Italic


. click once again on it to return to "Normal" text

 When this icon is clicked, on all the selected text and the entered text is displayed in Underlined

. click once again on it to return to "Normal" text

Selection of text alignment

- . click on the icon  to left align selected
- . click on the icon  to center selected text
- . click on the icon  to right align selected text

 click on this icon to select the text color. All the selected text and the text entered after will be displayed with the new color




- . click on the down arrow to display the list of available fonts
- . click on the Font name to select it

All the selected text and the text entered after will be displayed with this font

- . click on the down arrow to display list of sizes for the current font
- . click on the desired size. All the selected text and the text entered after will be displayed with this new size


Select another function to exit the text edition functions

Another Text edition function is available

- . click on the icon  to get a phylactery text editor instead of a rectangular one


Note : It is possible to save the text entered in a file :

- . click on the  and proceed as for saving an ordinary file

To load a text file, click on the button , select the file you want to load : the file contents is displayed at the same place where it was when it has been saved

Move the text at the desired place

DEFINITION OF LINES AND GEOMETRIC SHAPES


- . click on the icon  and move the mouse cursor on the edition page
- . click on the place where you want to put the left extremity of the line

While keeping the left mouse button pressed, move the mouse to the right extremity of the line

Release the left mouse button when line is satisfactory

See chapter "Modification of Layout contents" for the selection of line color and the modification of its characteristics

RECTANGLES

- . click on the icon  and move the mouse cursor on the edition
- . click with left mouse button where you want to put the top left corner of the rectangle

While keeping the left mouse button pressed, move the mouse cursor to the bottom right corner of the rectangle

Release the mouse button when the defined rectangle is satisfactory

The drawn rectangle is filled by default with Gray

See chapter "Modification of Layout contents" for color and shape modification

ROUNDED CORNER RECTANGLES

- . click on the icon  and proceed as described for the rectangle definition

Once the rectangle defined, click on the light gray square inside the rectangle in order to define the roundness of the angles



While keeping the mouse button pressed, move the mouse inside the rectangle in order to modify the roundness

The nearest the mouse is to the center, the more round is the angle

See chapter "Modification of Layout contents" for color and shape modification

ELLIPSES


- . click on the icon  and proceed as described for the rectangle definition

D.2.c/ Display of an irradiation curve :




- . click on the button corresponding to the kind of curve to display
- . move the mouse cursor on the page and click on the place where you want to put the top left corner of the curve area
- . while keeping the left mouse button pressed, enlarge the area to a satisfactory size by moving the mouse
- . release the mouse button when the size of the area is satisfactory

D.2.d/ Display of the customer reference :

- . click on the button 
- . move the mouse cursor on the page and click on the place where you want to put the top left corner of the data area
- . while keeping the left mouse button pressed, enlarge the area to a satisfactory size by moving the mouse
- . release the mouse button when the size of the area is satisfactory

D.2.e/ Display of synthesis of results :

- . click on the button 
- . move the mouse cursor on the page and click on the place where you want to put the top left corner of the data area
- . while keeping the left mouse button pressed, enlarge the area to a satisfactory size by moving the mouse
- . release the mouse button when the size of the area is satisfactory

D.2.f/ Modification of the layout contents :

All data displayed in the layout have common properties and specific ones due to the kind of data displayed

The properties of an object are a set of parameters which allow the control of the display on the print out page

Properties can be summarized as following :

Common properties :

- Position and size of display
- Frame and filling color

Specific properties :

- control of kind of data displayed

How to call the properties of a display area

- . click on the data display area to be modified with the right mouse button : a contextual menu is displayed :



- . click on the option "Properties"

or

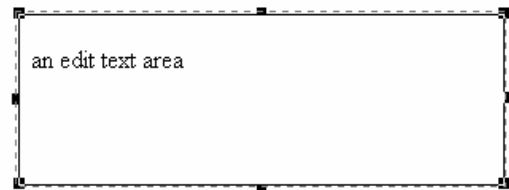
- . select the data display area to modify with the left mouse button and select the option "Properties" in the "View" menu

The properties dialog box for the current view is displayed

See the following chapters to know how to modify the properties of an object

Common properties

- **Modification of the position of data display on the layout :**
 - . click on data area to modify with left mouse button
 - . when data are framed (see image), while keeping the mouse button pressed, move the frame to its new position
 - . release mouse button when the position is satisfactory



- **Modification of the display size :**
 - . click on the area to modify, when it is framed, move the cursor on one of the 8 squares displayed on the frame
 - . when the cursor overlaps one of those squares, its shape is modified indicating the kind of modification possible
 - . when the mouse cursor is modified, click with the left mouse button and, while keeping it pressed adjust the size of the area by moving the mouse
 - . release mouse button when the display area has the desired size

An horizontal double arrow cursor indicates that it is possible to modify the width of the area

A vertical double arrow cursor indicates that it is possible to modify the height of the area

A diagonal double arrow cursor indicates that it is possible to modify the area in both directions

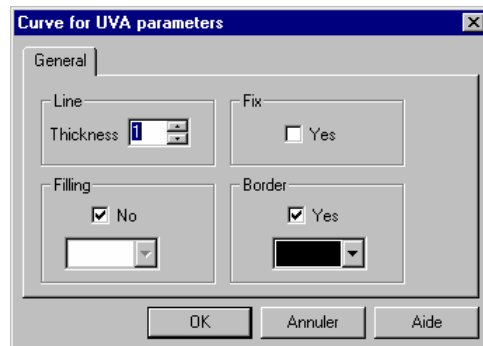
- Block the properties of an object : Fix function

You may want to protect an object against an accidental modification of its properties :

. select the option "Fix" in the menu "Object"

The fix option can be called with the contextual menu

- Modification of general properties



. click on the folder "General" of the properties dialog box

"Thickness" option determines the thickness of the frame surrounding the view on data. The value by default is 1. See also "Border" option

"Fix" option

When the "Fix" option is checked, no modification on the view can be made. The value by default is unchecked

"Filling" option

When the "No" option is unchecked, it is possible to select a background color for data display

- . click on the down arrow to display the list of colors available
- . click on one of the color to select it

The value by default is "No" checked (no filling)

"Border" option

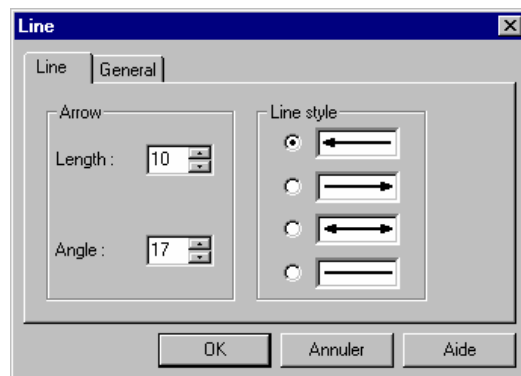
When "Yes" is checked a frame surrounds data

- . click on the down arrow to display the list of colors available
- . click on one of the color to select it

The value by default is "Yes" checked, the color by default is Black

- Modification of specific properties of an object

LINE



In the folder "Line" :

"Line style "

Select one of the proposed line style

If an arrow is selected:

"Length"

Thickness of the arrow

"Angle"

Adjustment of the extremity of the arrow

- **Modification of the line color**

Select the folder "General" and select the color in the "Border" frame

- **Modification of the color of the extremity of the arrow**

Select the folder "General" and select the color in the frame "Filling"

- **Modification of the thickness of the line in the folder "General"**

Select the right thickness value

D.2.g/ Functions CUT/COPY/PASTE

These functions allow to exchange images and texts between the print out editor and other software

It is also possible to copy a view on one of the pages on the others

COPY function:

To copy an object from the editor to the Windows clipboard :

- . select one or several objects in the editor
- . select the option "Option" in the menu "Edit"

CUT function :

This function is similar to the copy function but the selected object will be deleted from the page of the editor

- . select one or several objects in the editor
- . select the option "Cut" in the menu "Edit"

NOTE : Cut and Copy functions allow to transfer one or several objects to another page of the report or to send them to another software

PASTE function :

PASTE OF OBJECTS COMING FROM THE PRINT OUT EDITOR

Once the objects transferred in the Windows clipboard, it is possible to call them back on one of the pages of the print out editor

Go to the page where the objects have to be inserted

- . select the option "Paste" of the "Edit" menu

The clipboard contents is displayed at the same place as the object inserted in the clipboard

- . move the object to the desired place

PASTE OF OBJECTS COMING FROM OTHER SOFTWARE

Copy the text or image to the clipboard with the Cut or Copy function of the software

In the print out editor, select the option "Copy" in the menu "Edit"

The clipboard contents, if it exists, is displayed on the current page of the report, move it to the desired place

Note : The Copy function of some word processor (Wordpad for instance) copies the text on 2 formats in the clipboard

- . on text format
- . on image containing the text

The paste function in the print out editor, when it finds both formats available, transfer them to the Layout page

The text is then displayed twice

D.2.h/ UNDO DELETE SELECT function :

UNDO function :

This function allows to cancel the last operation made on the text, it is only activated for text edition objects

During text edition, select the option "Undo" in the menu "Edit"

DELETE function :

This function allows to delete the object currently selected

Once deleted, there is no way to call back this object

When objects are selected, press the "Del" key on the keyboard or select the option "Delete" in the menu "Edit"

SELECT function :

If the same operation has to be made on several objects, it is possible to select the objects and then to call the function to apply to them

- Selection of an objet :
 - . click on the object to select, it is then framed
- Selection of several objets :
 - . click on each object while keeping the "Shift" key pressed on the keyboard (Up arrow upper the "Ctrl" key)
- Selection of all the objets :
 - . select the option "Select all" in the menu "Edit" all objects on the current page are selected

D.2.i/ Modification of the overlapping order

The objects defined on the layout page may overlap

It is possible to modify the overlapping order of those objects ("Z" order)

- Moving the selected object under all other objects :

. click on 

or

. select the option "Move to background" in the menu "Object"

- Moving the selected object upper all other objects :

. click on the icon 

or

. select the option "Move to Foreground" in the menu "Object"

- Moving the selected object under the next object :

. click on the icon 

or

. select the option "Move under" in the menu "Object"

- Moving the selected object upper the next object :

. click on the icon 

or

. select the option "Move upper" in the menu "Object"

D.2.j/ Saving and Loading a print out report

Saving a print out report :

. click on the icon  or select the option "Save as" in the menu "File"

The "Save as" dialog box is displayed

Proceed as for a usual file saving

Loading a print out report :

. click on the icon  or select the option "Open" in the menu "File"

The "Open" file dialog box is displayed



Proceed as for a usual file opening

Exporting the print out report :

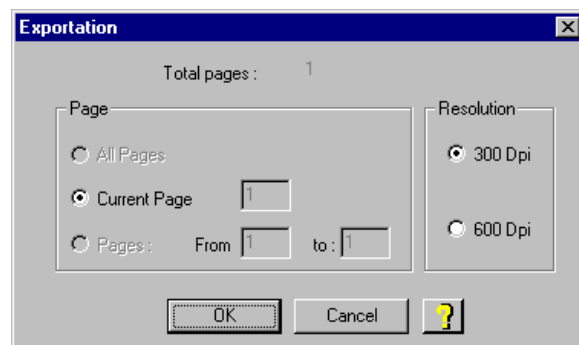
The print out report of a given analysis can be exported in an image file format in order to put it in another software file

Each print out page is transformed to an image

. select the option "Export" in the menu "File"

The "Export" function allows to transform the print out layout in an image file

It will be then possible for other software to get the print out report



- **Frame "Page"**

Selection of the pages to export

- **Frame "Resolution"**

The details display capacity is linked to the resolution parameter

The best resolution is the best the image but increasing the resolution value increases also the image file size

Most of the printers support a 300 Dpi (Dots Per Inch) and 600 Dpi resolution. A 300 Dpi * image should give satisfactory results

Select the pages to export

Once exportation parameters selected, click on the OK button, the "Save" dialog box is displayed

In this dialog box :



Select the image file format for exportation

Select the directory for image storage

. click on the "Save" button to export the report :

The file name of each print out report page will be built as following : If the file name chosen is "Image", the first page will be "Image1", the second "Image2" and so on

D.2.k/ Print out :

- . select the option "Print out" in the menu "File" or click on the icon  to print out the file
- . select the option "Print preview" in the "File" menu or click on the icon  to display on screen the pages to print out

D.2.l/ Quit the print out editor :

- . click on the button "Close" in the print out editor
- or
- . select the option "Close and go back to analysis" in the menu "File"

WARRANTY

Our products (except Compact Flash[®], light tubes and filters) are warranted against faulty construction or defective material for a period of TWO YEARS from the date of supply. Our products are not warranted for damage due to carelessness, incorrect use or bad maintenance.

The following defects are also specifically excluded:

- Defects caused by improper operation.
- Repair or modification done by anyone other than VILBER LOURMAT or an authorized agent.
- Corrosion caused by improper solvents or samples.
- Use of spare parts supplied by anyone other than VILBER LOURMAT.
- Damage caused by accident or misuse.
- Damage caused by disaster.

This instrument should not be modified or altered in any way. Modification or alteration of this instrument will:

1. Void the manufacturer's warranty.
2. Void the conformity certifications.
3. Create a potential safety hazard.

The Compact Flash[®], the tubes and the filters are not cover by our warranty.

The use of consumable products or non-original spare parts not recommended by our service department is at the user's own risk and therefore automatically invalidates the warranty.

Tubes, filters, batteries and consumable products are not included in the warranty.

We reserve the right to decide where the faulty goods will be repaired (in our workshop or elsewhere), and whether or not the faulty part is to be replaced; all other freight charges incurred being at the cost of the purchaser.

Returned goods will not be accepted for repair unless previous written authorisation is obtained from our service department. A request for authorisation must be accompanied by an itemised list of products, model numbers and the corresponding invoice numbers under which they were originally shipped.

All returned goods should have a certificate of decontamination.

The Buyer must bear all costs and risks incurred during the transportation of the goods from their collection at VILBER LOURMAT warehouse.

In the case VILBER LOURMAT incorporates some devices or equipment from another supplier in the manufacture of its products, the extent and the duration of the warranty will be those conceded by the suppliers or sellers.

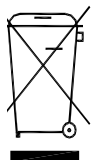
Manufacturer cannot be held responsible for any loss, bodily injury or material accident incurred by any failure of this supply, whatever the origin of this failure may be.

The responsibility of Manufacturer is strictly limited to its staff and to its own supplies.

In the case of dispute, only the commercial court of Meaux (FRANCE) shall be competent, even in third party claims proceedings or when there are several co-defendants.

NOTE: VILBER LOURMAT is not responsible for any injury or damage caused by use of this instrument for purposes other than those for which it is intended, or by modifications of the instrument not performed by VILBER LOURMAT.

Decontamination, collection and elimination of waste for France only



The buyer ensures and finances the decontamination, the collection and the disposal of waste electrical and electronic equipment (WEEE) under the conditions provided in the Articles 21 and 22 of the Decree No. 2005-829 dated of 20 July 2005.

In France, for tubes recycling, contact the company Recylum, www.recylum.com
Improper disposal may be harmful to the environment and human health.



DECLARATION OF CONFORMITY

This system complies with the requirements of the EC Directive 89/336/CEE, 73/23/EEC and EN 61010-1, relating to Electro-magnetic compatibility and low voltage.

The Electro-magnetic susceptibility has been chosen at a level that gains proper operation in residential areas, on business and light industrial premises and on small-scale enterprises, inside as well as outside of the buildings. All places of operation are characterised by their connection to the public low voltage power supply system