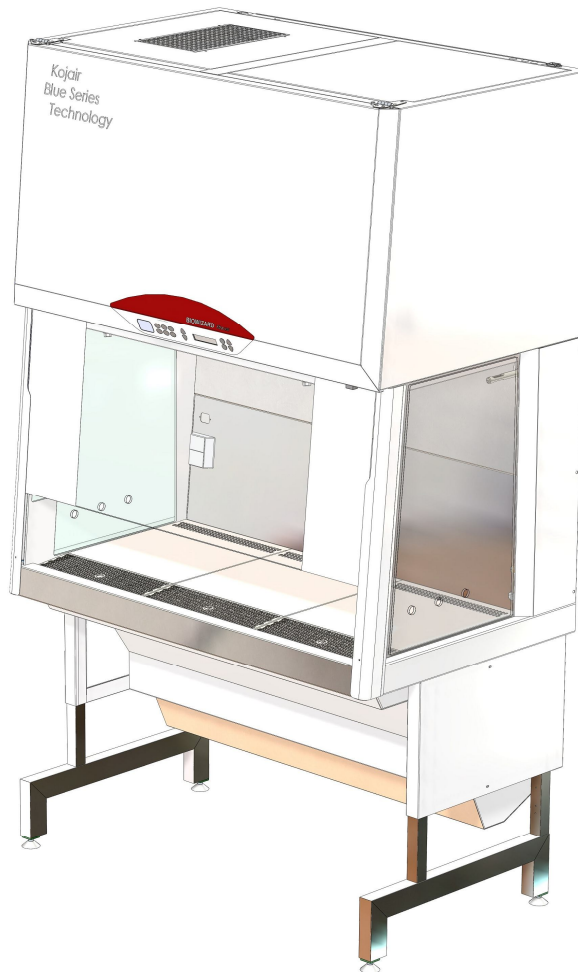


# *Xtra*LINE *Kojair®* BlueSeries Technology

Microbiological Safety Cabinet class II EN 12469 certified by TÜV

DIN 12980 certified by TÜV



## USER MANUAL

Serial number: \_\_\_\_\_

Date of delivery: \_\_\_\_\_

Customer: \_\_\_\_\_

The definition of the Microbiological Safety Cabinet is as follows:

A ventilated enclosure intended to offer protection to the user and environment from the aerosols arising from the handling of potentially hazardous and hazardous micro-organisms, with discharge to the atmosphere being filtered.

You are owner of one of the most modern and silent Class II Microbiological Safety Cabinets available. The Xtra Line –series is microprocessor-controlled and therewith widely customizable. All the standard-configurations of Xtra Line series are type-tested and approved by TÜV Rheinland according to current EN –standard 12469:2000 (Biotechnology. Performance criteria for microbiological safety cabinets) and the DIN 12980:2005 (the standard for Cytotoxic-Safety cabinets



**NOTICE!** Only use this product for its intended purpose.





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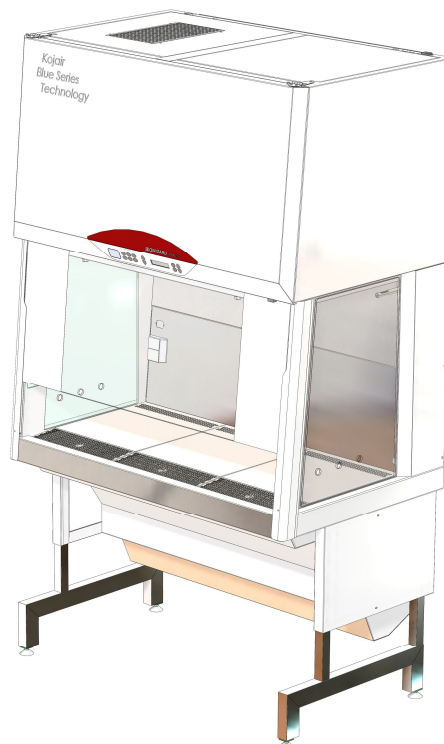


## 1. FEATURES AND SAFETY

### 1.1. INTRODUCTION TO THE CABINET

Microbiological safety cabinets are intended to reduce the risk to the operator when handling hazardous or potentially hazardous micro-organisms. They do not necessarily protect the operator from all the hazards involved. Some types of cabinet can also protect the materials being handled in them from the environmental contamination.

Kojair Xtra Line Blue Series Line is a Class II Microbiological Safety Cabinet operating on the recirculation principle. It protects the products handled on the work surface from contamination and safeguards the operator against substances hazardous to health.



Picture 1. Kojair Xtra Line Blue Series Class II Safety Cabinet

Examples of the uses of the cabinet are cellular culture, handling pathogenic micro-organisms, isotopes, sterile work for operations, handling medical substances in hospitals and pharmacies as well as the production and maintenance of electronic items in which particle-free air is a necessity.



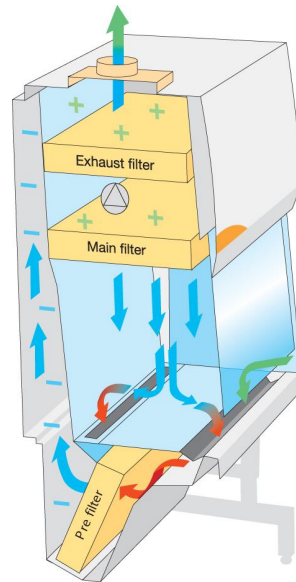
**NOTE! Only Class III Microbiological Safety Cabinets can be used for working with Group 4 pathogens. The Kojair BW3 is a class III safety cabinet which protects the user and the environment from Group 4 pathogens.**

**Please contact your local Kojair representative for more information.**



The basic principle of the cabinet is that the replacement air moves through the grid at the front edge of the work surface to the bottom basin and then again to the recirculation system. Simultaneously it forms an air curtain in the work opening, which prevents air from flowing outwards.

The recirculation air inside the cabinet is purified as it flows through the HEPA-filter and it flows laminary through the workspace. (see picture 2).



Picture 2. Principle of the airflow

## 1.2. CONSTRUCTION MATERIALS

The main construction material of the cabinet is painted mild steel. The work surface and the collecting pan located below it are made of stainless steel (AISI 304).

The front and side walls are made of 6 mm thick laminated safety glass.

## 1.3. POSITIONING THE CABINET AND SAFETY INSTRUCTIONS



**NOTE! The Cabinet may crash. Use special attention when moving and installing the cabinet. Take into account the center of gravity when placing transportation equipment.**

**For more information about the cabinets safe handling and moving see the service manual part 2.2**

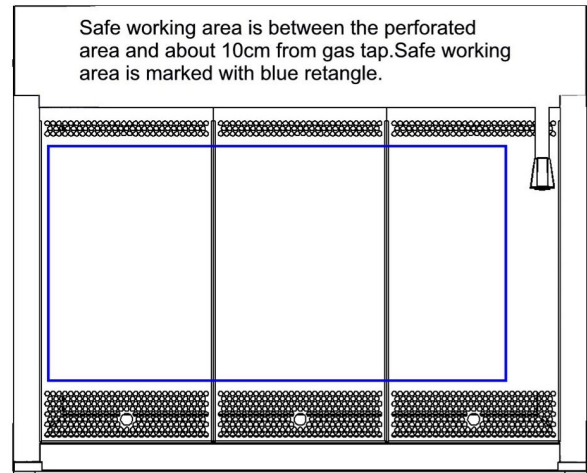
The cabinet should be positioned so that there are no external or conflicting airflow disturbances when it is operating such as open windows or personnel passing in front of it.

The cabinet should be switched on at least 15 minutes before starting the work so there is time to clean the workspace. Before starting the actual work it is recommended that the work is carefully prepared so that equipment and material are moved in and out of the cabinet as little as possible.

A continuous in-and-out movement disturbs the airflow and weakens the protection given by the cabinet. For the cabinet to give the best possible protection, you should try to minimize rapid hand and arm movements as much as possible.



**NOTE!** Beware that you do not obstruct the airflow by obstructing the grid on the worktable. The safe working area is between the grids (see picture 3).



Picture 3. Safe working area.

While you are working, the front glass of the cabinet should be in the working position. If the front glass is not in the correct position, the user will hear immediate warning from the alarm. If you intend to switch off the cabinet when you have finished working, it is better to close the front window before shutting down the cabinet.



**However, it is better if the cabinet can always be in the normal operating mode. When you are not working in the cabinet, close the front glass and device automatically switches to *half speed* mode. See chapter, 2.1 Control panel.**

It is strongly recommended that gas flames are used on the left side of the work space as short time as possible. That is because the flame can disturb the airflow and it will warm up the recirculated air, which can cause an alarm.

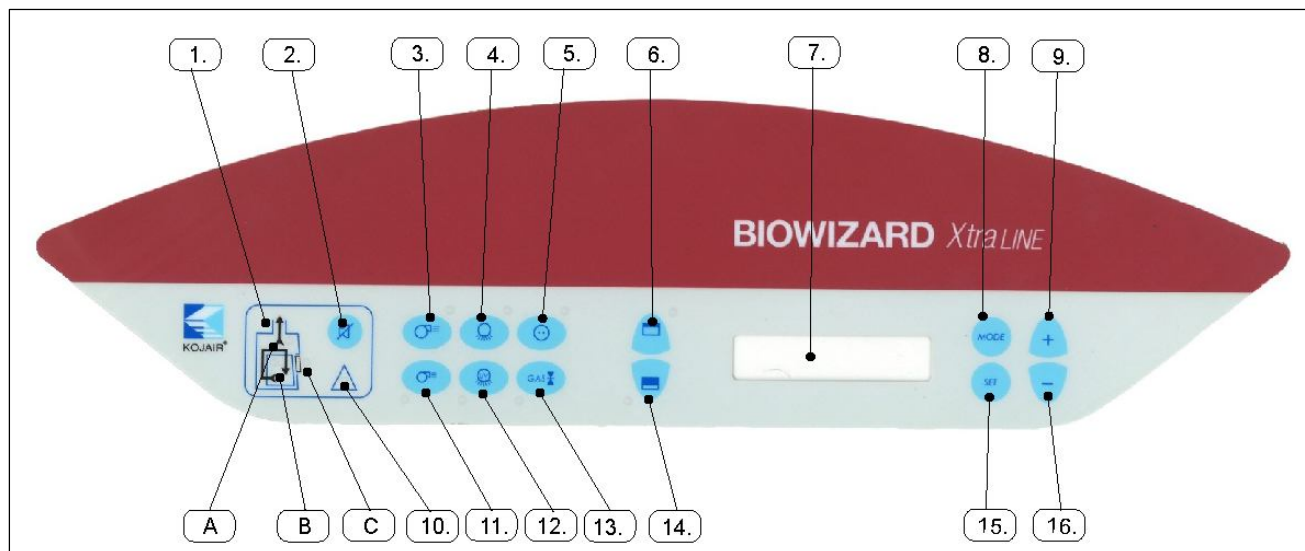


**NOTE!** Before starting work, check that HEPA-filter on the roof of the workspace is intact.



## 2. USING THE CABINET

### 2.1. CONTROL PANEL



CONTOL PANEL		FUNCTIONAL DESCRIPTION
CONTOL BUTTON / ALARM LED		
1.	Alarm indicators	Red led is used for indicating alarms. When the fan has been switched on the general alarm -LED lights up. The general alarm -LED lights stays on until the air speed is sufficient. If sufficient air speed is not reached in 5 minutes, the cabinet gives an acoustic alarm.  <b>Working in the cabinet is not allowed while the visual and/or acoustic alarm is activated. If alarm goes on stop working and contact the person in charge of the laboratory.</b>  If the power failure occurs the general alarm LED –lights up and the acoustic alarm will sound. <b>Working in the cabinet is not allowed during power failure.</b>
1. A	Exhaust air alarm	If the exhaust air speed is not correct the general alarm –LED and the exhaust air alarm –LED will light up and the acoustic alarm will sound.
1. B	Recirculated air alarm	If the recirculated air speed is not correct the general alarm –LED and the recirculated air alarm –LED will light up and the acoustic alarm will sound.
1. C	The front window wrong position	The front glass of the cabinet should be in the working position during the work. If the front window is not in the correct position both the general alarm –LED and the front window alarm –LED will light up and the acoustic alarm will sound.
2.	Alarm resetting button	Not in use in this cabinet model
3.	Start button	Press this button to start the cabinet. (Press for few seconds to start)
4.	Lights	You can switch on workspace lights on using this button.



5.	Socket	This button activates the socket.
6.	Front window up	With this button you can lift up the front window. When you lift up the front glass from its lowest position, it stops automatic to operating position. <b>It is not allowed to lift the front glass any higher excluding while cleaning or service.</b>
7.	Lcd –display	
8.	Mode	With this button you can go to the menu.
9.	+	With this button you can browse through menus and set values
10.	General alarm	Red led is used for indicating alarms. When the fan has been switched on the general alarm -LED lights up. The general alarm - LED lights stays on until the air speed is sufficient. If sufficient air speed is not reached in 5 minutes, the cabinet gives an acoustic alarm.  <b>Working in the cabinet is not allowed while the visual and/or acoustic alarm is activated. If alarm goes on, stop working and contact the person in charge of the laboratory.</b>
11.	Start fan or switch fan to ½ speed	You can switch cabinet to half speed mode using this button. The workspace lighting will shut down and the cabinet will give an acoustic and visual alarm. The acoustic alarm signal lasts for only a few seconds.
12.	Uv –light (option)	The UV-light socket is in the workspace back wall; if you wish to use the UV-light, push the UV-light button on the control panel. There are two modes for UV-light, button or timer.  <b>For more information about using UV-light, see part 2.5.</b>  If button is selected, the UV-light will stay on until UV-button is pressed again. If timer is selected, the cabinet asks for shutdown time, which is selectable between 20 ... 120 min with 10 min interval. Time can be changed with + and - buttons and time is selected with SET button. UV-light is switched off after selected time.
13	Magnetic valve	Used with optional gas valve. If you use liquid gas during the procedure, first you have to push the magnetic valve button from the control panel. This enables the gas to flow. The gas valve works only when the cabinet is at 1/1 speed mode.
14.	Front window down	You can move down the front window using this button
15.	Set	With this button you can confirm selection.
16.	-	With this button you can browse through menus and set values





## 2.2. WHAT TO DO AT FIRST START-UP



**NOTE! Before using the cabinet, perform the installation tests (listed in chapter –Testing in service manual) and clean the cabinet carefully. See the cleaning instructions in section 2.4 Daily maintenance and cleaning**

Check if the cabinet's power cable is in the socket outlet (230 VAC, 50 Hz) and the other lead is in the electric plug on the top of the cabinet.

Turn the mains on by the key-switch (located on the right side of the front panel, see picture 4.). The self-test can take 1 to 5 minutes and during the self-test the cabinet does not take any orders. During self-test the red general alarm -LED lights up, other led's blink and cabinet gives an acoustic alarm (acoustic alarm lasts only a few seconds). Do not touch the controls during the self-test.



Picture 4. Key switch connects cabinets main power on or off.

The fan and the lights can be switched on by the buttons located in the control panel. Before switching the fan on you should check that the outlet on the roof of the cabinet is not blocked so that the filtered exhaust air can be freely exhausted out of the cabinet.

**→ TO START UP CABINET PUSH BUTTON 3. (Press for few seconds to start)**

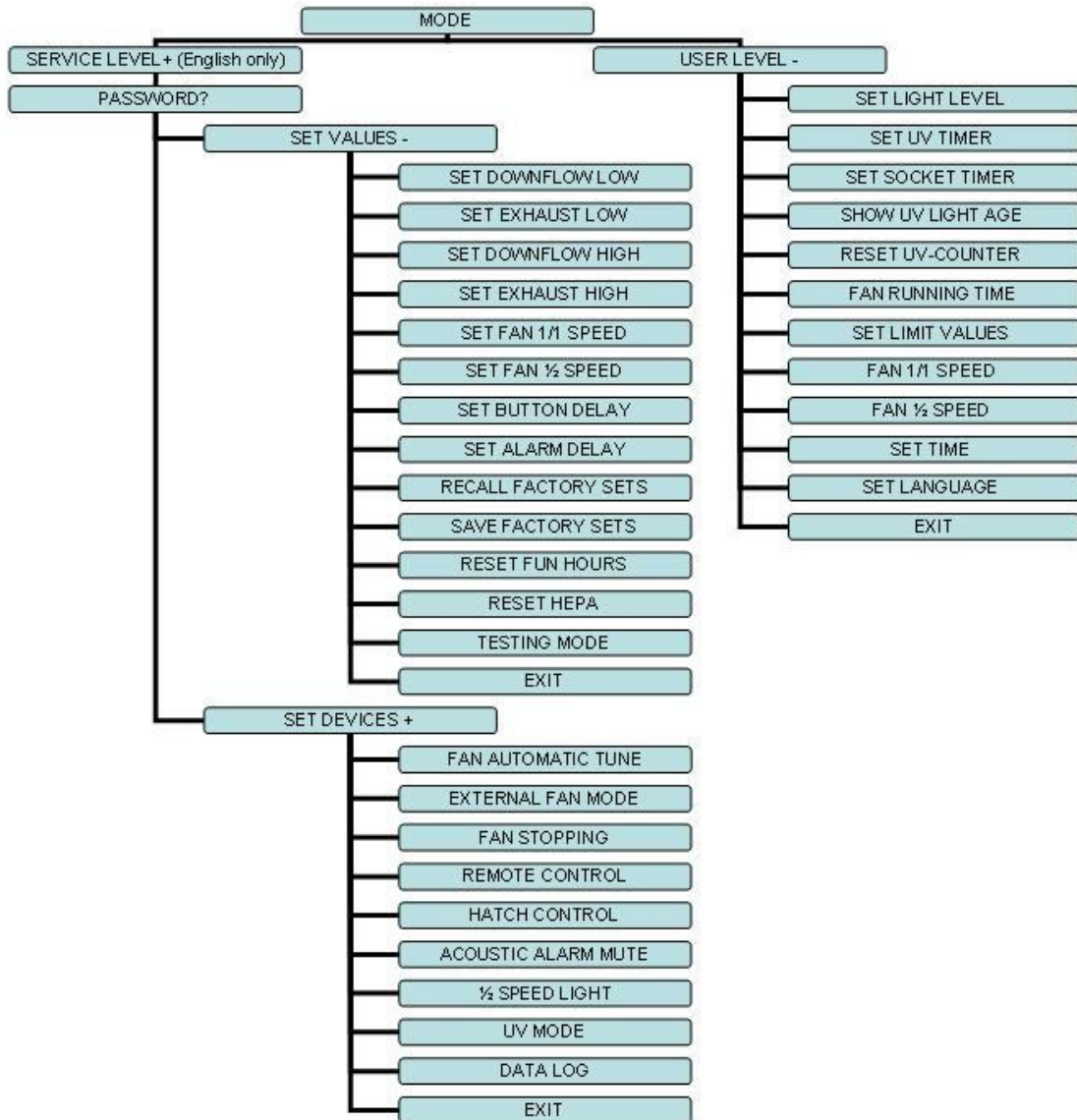
If sufficient air speed is not reached in 5 minutes, the cabinet gives an acoustic alarm.

The key lock is activated by pressing SET -button and START -button in sequence. When the key lock is activated the panel can be safely wiped, etc. without risking unwanted commands. Green led's in the front window up and front window down -buttons are blinking to indicate lock mode. The setting can be deactivated by pressing the SET -button and START -button in sequence.



### 2.3. CONTROL PANEL FUNCTIONS

The diagram below represents the hierarchy on menu options available in Kojair Xtra Line Blue Series cabinet. Press MODE button to enter menu. At first there is a selection user/service with - / + buttons. Service level requires password. Only Kojair Tech Oy authorized service technician is allowed to access service level.





### 2.3.1 USER SETTINGS

Functions under the user settings are for “daily use” and using these functions Doesn't harm protection level of the cabinet, that 's why you do not have to set any password to get access to them. All the text in LCD-display is shown with capital letters and texts can be shown with six different languages (see table below)

Start the cabinet by the main key switch. The LCD-display shows the current software version of controls and the cabinet also begins a self-test.

**MODE** – opens the menu and you can browse it by using + and - buttons

**SET** – allows you to select a function from the menu and / or confirm selection.

Press button 8. **MODE**

Display shows: + =SERVICE - =USER

Select USER level with [-]

By pressing – and + buttons the user can scroll through the functions. A function is selected by pressing button **SET** button.

User setting functions are described in the table below

USER SETTING	
FUNCTION	DESCRIPTION
SET LIGHT LEVEL	Regulates the intensity in the working area between 60 % and 100 %. By pressing the [+] or [-] -buttons the display shows the value in 1% intervals. To confirm the desired value press SET –button. The light intensity changes when the SET –button is pressed.
SET UV TIMER	<b>For more information about using UV-light, see part 2.5.</b> Select first the function set or browse.
SET SOCKET TIMER	In set mode you can select daily or weekly mode. In daily mode you select start and end times with [+/-] buttons. The function is selected by pressing SET. In weekly mode you select first the day with [+/-] buttons, accept it with SET button and select finally the start and end times like in daily mode. Exit with MODE button. If you want to delete timer settings, see below.  In read mode you can check or reset the timer settings. The display shows first the weekly settings, with next step down [-] you can move in settings, mode button reset the timing. The display shows “Deleted” after every reseted timing and when all timings have been reseted, the display shows “Empty”. After that you can make the same with daily settings. With SET –button you can go back if do not want to delete timer settings.
SHOW UV LIGHT AGE	The display shows how long time the UV-light has been on.
RESET UV COUNTER	Resets the hour counter for the UV-light.
FAN RUNNING TIME	This function shows the time the fan has been running.
SET LIMIT VALUES	Set the alarm limits to the fan and UV-light. The limit can be selected between 2000 - 10000h for fan and 1000 – 10000 for UV-light. Factory setting for UV-light is 5000h.

FAN 1/1 SPEED	Shows the rotation speed of the fan to normal operation speed or ½ speed. The current speed, which is between 0-100 % for 1/1 speed and 0 – 50% for ½ speed, is seen on the display.  NOTE! The values can't be changed.
FAN 1/ 2 SPEED	
SET TIME	Set the clock to real-time. Change the value with +/- buttons, with SET button to the next field/ok. HH:MM YYYY MO/DD WD  HH=hours MM=minutes YYYY=year MO=month DD=day WD=day of the week
SET LANGUAGES	Selects the language: English, Swedish, German, Finnish, French, Dutch

## 2.4. DAILY MAINTENANCE AND CLEANING



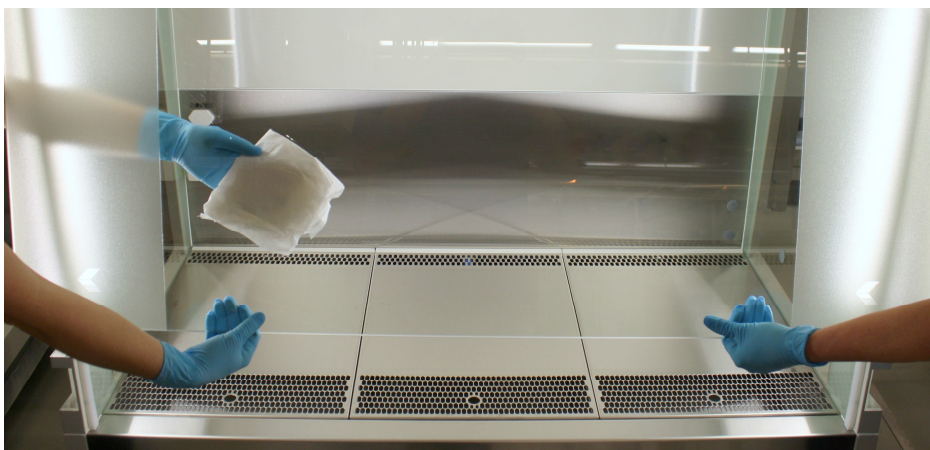
**NOTE!** Before maintenance and cleaning it is mandatory always to check what kind of substances have been handled in the cabinet. If cytostatics or other hazardous substances have been handled in the cabinet special care has to be taken. The person who is cleaning and servicing the cabinet should use a mask, protective gloves and an overall. More detailed instructions will be issued by the person in charge of the laboratory.

**To ensure the safety when cleaning the front glass, confirm the operation together with at least one person.**

Turn the key switch on. The switch is located on the right bottom edge of the front panel. Drive the front window to highest position. In order to clean the back of the front window you have to lift it up carefully. **Do not lift the glass from it ends because the glass may bend and crack.** See the correct lifting points from the picture 6.



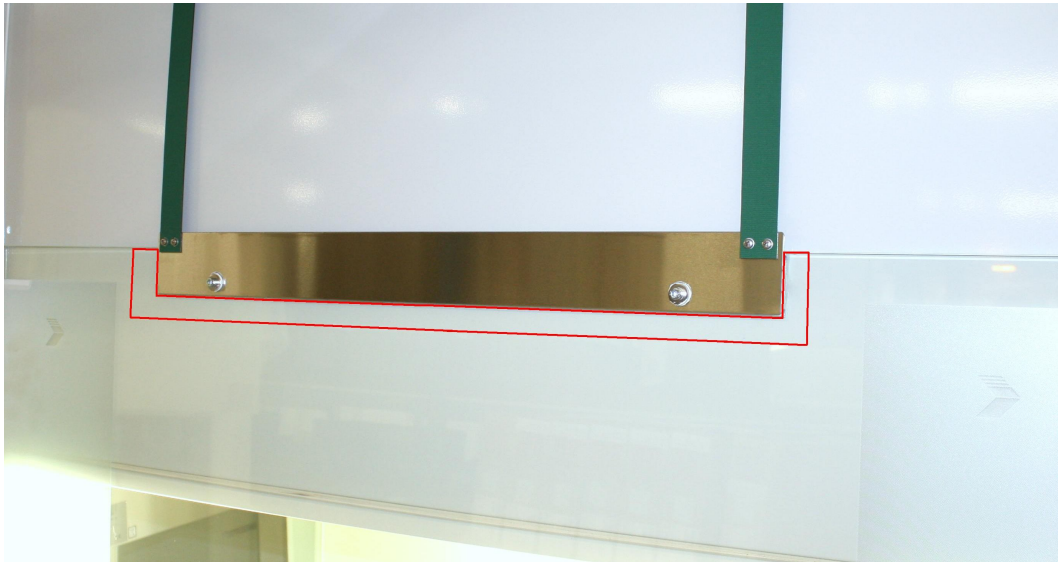
**NOTE!** Handle the front window with extra care. See picture 6.



Picture 6.



**NOTE! Do not clean front glass with detergents or disinfectants around glass plate (see the picture 7)**



Picture 7. Do not clean front glass with detergents or disinfectants around glass plate. Area is marked with red in the picture.

Clean the workspace of the cabinet with mild detergents and disinfectants with a 70 % alcohol solution. You can wipe off the alcohol that has been sprayed on or you can simply let it evaporate.

The cabinet's outer surfaces should be cleaned by wiping with neutral or mild base detergent solutions.



**NOTE! The use of solvents for cleaning is not permitted.**

Clean the work surface inside the cabinet. The lower surface and collecting pan should always be wiped during cleaning (Picture 8).



Picture 8.



**NOTE!** When cleaning the workspace of the cabinet you should be careful about the filter located above the workspace and also the sensor of the down flow indicator (picture 9.) in the back wall of the workspace. They can be easily damaged when wiping the cabinet and therefore should not be touched.



Picture 9. Down flow indicator

## 2.5. UV-LIGHT

You can also use the UV-light (option) for decontaminating the workspace; it takes 30 to 60 minutes. You can use the timer for timing the decontamination. See instruction below.

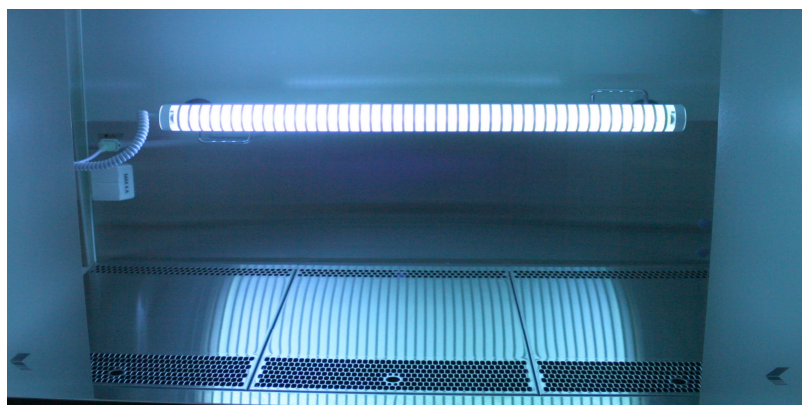
**UV-light must not be switched on when working in the same room. UV-radiation can harm eyes and skin of operators and cause damages to other materials.**



**NOTE!** UV-light is not recommended for decontamination by the EN 12469.



**NOTE!** The operating time of UV-light's tube is about 5000 hours. Within that time interval of the radiation power decreases to 85%. For max. efficiency it is recommended the UV-tube to be changed after 5000 hours.



Picture 10. UV-light is switched on.



## 2.5.1. INSTRUCTION FOR UV-LIGHT

This instruction serves Kojair SL- GL- and XL-cabinets with UV-light selection.

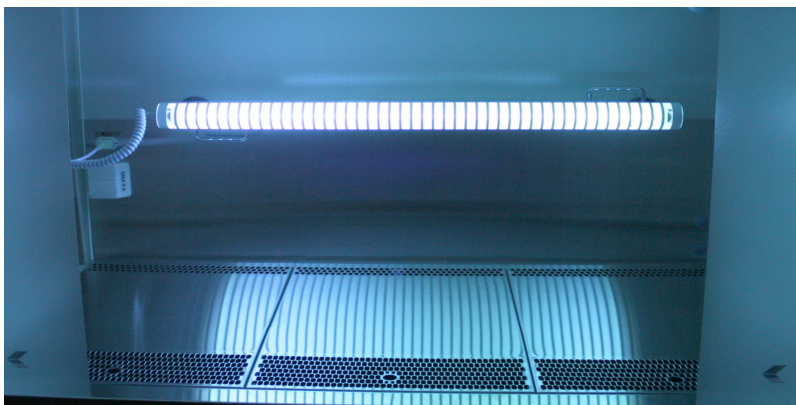
### 2.5.1.1. INTRODUCTION

UV-light fixture itself is a separate unit which is to be placed on the back wall of the cabinet's working chamber with magnet fastenings and plugged in the UV-outlet at the back wall of the working chamber next to the 230VAC outlet (Picture 11.).

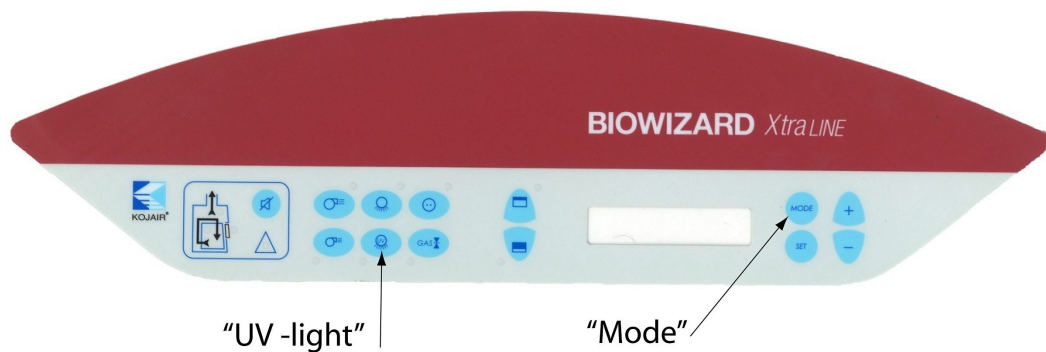
The UV-light can be operated from user interface by pushing the UV-light button (Picture 12.) or by selecting timer and programming function in use.



Picture 11.



The UV-light is on.



Picture 12.

### 2.5.1.2 UV-LIGHT BUTTON

When pushing the UV-light button the display will show two alternatives:  
 [+] = Button                      [-] = Timer

If [+] (immediate usage) is chosen the display asks to close the front window. UV-light will then lit after closing the front window and stays on until the UV-light button is pushed again or if the front window is opened.

If you choose [-], the display will show time selection. You can select disinfection time with [+] or [-] buttons to 20-120 min with 10 min intervals. Confirm selection by pushing "SET". The display then asks to close the front window. UV-light will lit after closing the front window and stays on until the set time has elapsed, UV-light button is pushed again or if the front window is opened.

### 2.5.1.3 TIMER IN THE MENU

Go to the timer functions by pushing "MODE" and select user level by pushing [-].  
 Go to "Set UV timer" with [+] or [-] buttons and press "SET".  
 The display will show now [+] = Browse and [-] = Set.

By pushing [+] (Browse) all weekly and daily settings can be browsed through and also deleted one by one by pushing "MODE" = delete.

By pushing [-] (Set) the display will ask to select [+] = Weekly or [-] = Daily.

If you choose "Daily", there will be in the display ON 00:00 and OFF 00:00.  
 The On-time means the exact clock time when the UV-light will turn on and it turns off at the Off-time.  
 Select hours and minutes by pushing [+] or [-] buttons and confirm each selection by pushing "SET".

If you choose "Weekly", you can choose exact days of the week, when you want to use the UV-light timing.

Choose a day with buttons [+] or [-] and press "SET" to confirm.  
 Set the time, when you want the UV-light go on and off. Confirm by pressing "SET"  
 You can repeat this as many times you need.  
 When you are done, press "MODE".  
 Use [+] or [-] buttons to find "Exit" and press "MODE".  
 Close the window.



**NOTE !** When using timer function, the UV-light is turned on at the selected times only if the front window is closed totally.





**NOTE! All selected weekly and daily times are active. If only one certain selection is supposed to be used, all others must be deleted.**

Example of timer's daily setting:

UV-light is wanted to be turned on every day of the week at 22:00 – 23:00

- Push "MODE"
- Push "-"
- Push "-" until there is "Set UV timer" in the display
- Push "SET"
- Push "-"
- Push "-"
- Push "-" until the hours are at 22
- Push "SET" (to confirm hours)
- Push "SET" (to confirm minutes)
- Push "-" until the hours are at 23
- Push "SET" (to confirm hours)
- Push "SET" (to confirm minutes)
- Push "+" until there is "Exit" in the display
- Push "MODE"
- Push "window down"-button until the window is closed



**NOTE! In general for daily maintenance the cabinet requires only cleaning. Technicians trained by Kojair Tech Oy will determine needs for other maintenance, including filter change, in yearly inspections.**



### 3. WARRANTY

The manufacturer of this product provides a guarantee under the following terms:

- The duration of this guarantee is one (1) year from delivery or from approved handover, when no other delivery term has been agreed.
- The guarantee covers manufacturing, raw material and material defects. The customer is to inform the manufacturer of any defects without delay.
- The guarantee does not cover wear and tear components such as filters or fluorescent light tubes.
- The guarantee is not valid any more if this device is used for any other use other than its designed use or if any harmful substance is used, which damages the cabinet material.
- The guarantee is not valid any more if any other spare part is used in replacement of original components as listed in the spare parts list. In connection with the guarantee the manufacturer reserves the right to obtain any damaged component. If such damaged component is not returned to the manufacturer during the duration of the guarantee then the manufacturer reserves the right to invoice for replacement components.
- This guarantee includes repair work carried out by the manufacturer, as well as required replacement parts under guarantee.
- The guarantee is not valid any more if this cabinet is repaired or serviced, during the valid guarantee period, by persons other than personnel from the manufacturer or persons authorized by the manufacturer.