

LABOX



low
vibration



advanced
biohazard
shield



I.V.F.
solution



low
noise



smart
technology



continuous
monitoring

MICROBIOLOGICAL SAFETY CABINET MBB-IVF

Special biological safety workstation (MSC, BSC), class II, according to EN12469, with laminar airflow for works in tissue centers, e.g. IVF, etc. The workstation is designed to enable optimal laboratory work with cells and tissues and in the same time to protect the product, the personnel and the environment against particulate and bacterial contamination. Using state of the art components and most advanced SMART control system CR2000.

- + Fully automated operation
- + Intuitive and quit operation
- + Low operation cost
- + Low vibration
- + Lifetime service support
- + Integrated monitoring and audit trail
- + Remote control
- + Fully compliant with the current GMP



BASIC DESCRIPTION

BIOLOGICAL SAFETY CABINET

The state of the art biological safety cabinet with most updated technology composed by high quality components and equipped with **advanced control system CR2000**. Best performance acc. to EN12469, superior safety, high efficiency and simply and intuitive, user friendly interface. Design suitable for laboratories and clean-rooms acc. to GMP and ISO 14644.

Full control and real-time information through the **touchscreen or remotely** with your smart phone, PC or tablet. Comprehensive and user friendly interface. Continuous monitoring of temperature in the working space and pressure drop on HEPA filters. Audit trail, remote service and support. Possibility to connect to monitoring center. **Email and push notifications.**

Powerful DC ECM motor is **highly energy efficient** and guarantees full utilization of the sorption capacity of the HEPA filter. Very low operating costs are also ensured by the possibility of using reduce mode and stand-by mode.

For achieving **optimal light comfort** in the working space there is installed a powerful LED light with dimmable feature (0-100%).

For **maximal safety** there are installed most updated, precise and reliable, sensors, like as optical safety gates for front windows (hands and also microscope oculars), residual current circuit-breaker, waterproof tray under the worktop, V-shape design of the front suction grill and software features like scalable user settings, alarms, early notifications system and smart continuous analyzation of main operation parameters.

Regular decontamination can be done using embedded **UV light** with smart timer. The cabinet has also special, sterilization, adjustable program (formaldehyde steam, VHP and others).

The **superior user comfort** is another great advantage of the cabinet. Beside the sloped front window there is a great, spacious, working space and also legroom, even if the microscope is installed. **Low noise**, and **low vibration level** helps user to focus on work without distraction and reduce fatigue. For maximum comfort the adjustable armrest can be installed.

Further information you can find in MBB datasheet.

HEATING SURFACE WITH OR WITHOUT MICROSCOPE INTEGRATION (INCLUDING HEATED GLASS STAGE)

For works with heat-sensitive biological material, the **recessed heating surface** (600x290mm) is integrated into the worktop. This heating surface achieves **excellent stability and homogeneity**. The top of the heating surface is made of the same material as the surrounding worktop surface, ie high-quality stainless steel. The basis of the heating surface is a special heated heating glass of a size covering the entire surface. Thanks to this solution, uniform heating is ensured both in the **heating surface and also glass stage**. Glass stage is made of high quality quartz glass (d 55mm).



The heating surface temperature is controlled by means of **precise PID regulation** within the CR2000 SMART control system. The temperature is measured continuously with a precise temperature sensor. The evaluation is continuous and the latest algorithms are used. This ensures fast heating of the heating surface without significant overshoot over the set temperature. The heating surface can be **controlled both locally and remotely** with cell phone or PC, both within the local data network and via the Internet and also can be operated by smart timer. The user is able to control both the temperature setpoint and alarms **according to GMP standard**.

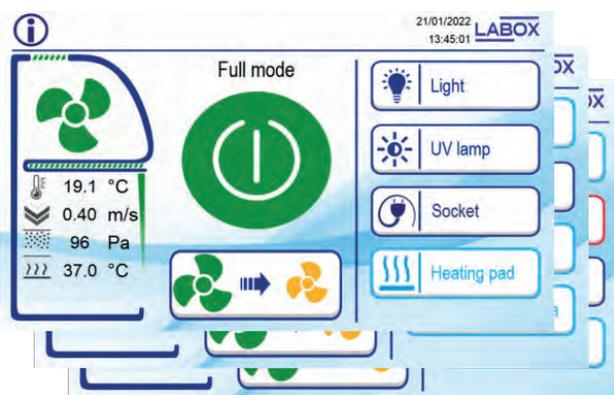
As a proven combination is recommended to integrate microscopes and microscope lights stands from NIKON. **Using the original LED light developed by microscope manufacturer** always brings the best, true images (including e.g. OCC feature), achieves top performance and allow to do upgrade in the future. Using e.g. stand P-DSL is also the best solution from ergonomical point of view. Thanks to its design and the mode of integration into the cabinet the operator experiences viewing without fatigue and feel comfortable thanks to great legroom.



MAIN FUNCTIONS AND ADVANTAGES OF THE CR2000 CONTROL SYSTEM

- + Complete information about main parameters values, status, alerts and alarms with full detail on the main screen
- + Easy mode change (operating, reduce, stand-by) and control of installed accessories
- + Remote control (Android, iOS, PC)
- + Advanced timer
- + Sending notification and alarms by email
- + Remote service management
- + Push notification on mobile phone (Messenger, Line, etc)
- + Audittrail - recording of changes, alarms, etc.

The firmware is constantly being improved. New functions reflecting new legislative requirements and facilitating work and improving user comfort.



OPTIONAL ACCESSORIES

The workstation can be modified / equipped with the following optional accessories:

- Magnetic tool holder on the rear work wall
- Screen or all-in-one recessed in the rear working space wall. Convenient for microscope application, visualization or gravimetric preparation
- Connection to building exhaust system
- Armrest height-adjustable ergonomic armrest (across the entire width of the workspace)



- Ionization system for the removal of electric charge from the work area
- Electrical sockets, data sockets, USB sockets, etc.
- Gas / vacuum / liquid supply valve
- Front panel color (blue, white)
- Uninterruptible power supply (UPS) to ensure protection against electric power blackout and disturbances in the power network (including compensation of the local variations in the mains voltage and frequency)
- Cabling organizer - to hide the cabling under the worktop, can be supplied including a socket strip with five inputs
- Integrated heating pad (operating temperature 30 to 40 °C)
- Shelf, PC compartment, pull-out shelf for keyboard
- Technology integration - weighing worktop, microscope, waste containment, bushing, etc.

More information you can find in catalogue sheet - „Accessories“

MAXIMUM SECURITY AND USER FRIENDLY OPERATION



The workstation is designed for **works with hazardous materials, substances, tissues, viruses and cells, etc.** This workstation has all up-to-date protection and control systems to **keep safe the operator and the environment** control. The most important security features are following:

- + **Continuous, rapid, monitoring and analysis** of filter pressure and airspeed velocity and other critical parameters
- + **Secure detection system** of objects located in the passage of the front glass movement – hands, fingers, tubes, cables etc. Even when the microscope is installed then it protect also the eyepiece
- + **Advanced overheating protection** for heating surface (if installed)
- + **Overcurrent electrical protection**
- + **Tight technical plenum and solid construction**
- + **Ingress protection rating IP65 waterproof working space**
- + **Adjustable decontamination program**
- + **Detailed alarm system identification**
- + **Important information sent by e-mail, push notifications to mobile phone**

TOP PERFORMANCE ACCORDING TO EN 12469 standard

Performance	Index
Tightness (LI)	LI-C
Cleanability (CI)	CI-C
Sterilizability (SI)	SI-C

MBB was tested for all tests and **obtained the highest marks** according to the scale of the EN 12469 standard.



TECHNICAL PARAMETERS

Performance classes*	
Leaktightness performance	LI-C
Cleaning performance	CI-C
Sterilization performance	SI-C
Cleanliness class acc. to US FS 209 E	100 (M 3,5)
Cleanliness class acc. to EN ISO 14644	ISO 5
Quality class acc. EU GMP	A
Supply voltage [V/Hz]	230V / 50Hz
Airflow velocity in the working space(m/s) **	0.4±0.05
Noise level (db(A)) ***	max. 57
Illumination (lx), dimmable 0-100%	> 2000

* MBB was tested for all tests and obtained the highest performance and safety marks according to the scale of the EN 12469 standard

** in reduce mode, the airflow speed is significantly lower, but the safe protection of the operator and the lab is still maintained

*** noise reading acc. to EN12469 in the open field at 0.26 airflow speed

Smart control system CR2000 features: working mode selection; user selection with various access level; remote control via Android, iOS, Windows; advanced timer; remote service support, light level intensity, main HEPA filters pressure level, audit trail, validation and service interval warning, alarm system according to the GMP requirement including email notification and push notification (in case the workstation is connected to the internet). In time notification with smart prediction for filter replacement. Complete communication in English, Spanish, Czech language. Others languages can be added on demand.



DIMENSIONS

	External dimensions /mm/, including stand *			Workspace /mm/			Power consumption (W)
	width	height	depth	width	height	depth	
MBB-IVF - 12	1240	2155	780	1230	690	560	500
MBB-IVF - 18	1850	2155	780	1840	690	560	650

* Standard height of the stand is 750 mm (with the possibility of rectification up to 50 mm)

Note: If you are looking for the best solution for IVF workstation without needs of EN12469, take a look to FBB-IVF. If are you looking for ultimate antivibration solution take a look to FBB-R-IVF.

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