IN VITRO FERTILIZATION

LAMSYSTEMS

IVF WORKSTATIONS

Specially designed for Assisted Reproductive Technology

2020

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WORKSTATIONS ARE SPECIALLY DESIGNED FOR LABORATORIES OF IN VITRO FERTILIZATION.

Highly pure air environment in the cabinet chamber provides solid protection of the technological process and minimizes the risk of contamination when working with oocytes and embryos and doing research in ART.

FEATURES

CLEAN AIRFLOW

– Consistent, turbulence free airflow with HEPA H14 filtration according to the European Standard EN 1882-1 provides air cleanliness efficiency of 99,995% for particles sized 0,3 µm
– Carbon filter as part of the standard configuration provides air purification from VOC.
– Radial low-noise EC fans decrease noise and vibration level for comfortable working conditions

COLOUR TOUCHSCREEN

– Selection and adjustment of the airflow settings (pre-operation, operation, economy, clean maintenance modes)
– Automatic switch-on time setting for the cabinet's pre-readiness to work on the specified days of the week
– Tabletop heating temperature setting (in case of two heating zones, the temperature is individually set for each one)

WORKING AREA

– L-shaped heated zone/-s
– Different location of heated zones
– Smooth single-piece tabletop made of stainless steel has a visually marked heating zone to ensure the samples are always warm

INDEPENDENT HEATED ZONES

Each workplace is featured with 7 independent heated zones with individual sensors and heating elements that ensure accurate temperature adjustment as well as fast and even heating

LIGHT AND HEATED OBJECT PLATE

– An integrated LED light with heated object plate is featured with independent temperature adjustment
– Light angle regulation
– Lighting dimmer is located on the tabletop
– LED light spectrum in the work chamber excludes UV radiation and its harmful impact

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WITH LAMINAR AIRFLOW

PRODUCT PROTECTION

Highly pure air environment is created in the work chamber to protect valuable samples during ART.

– All brands of microscopes can be installed
– Additional options: gas supply and humidification system, 21.5” monitor, antivibration table

Built-in system for premixed gas supply and humidification

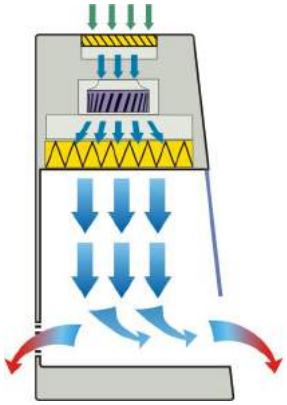
Cut-out for the microscope (shape, size and location as per customer’s requirements)

Removable armrest

Light angle adjustment

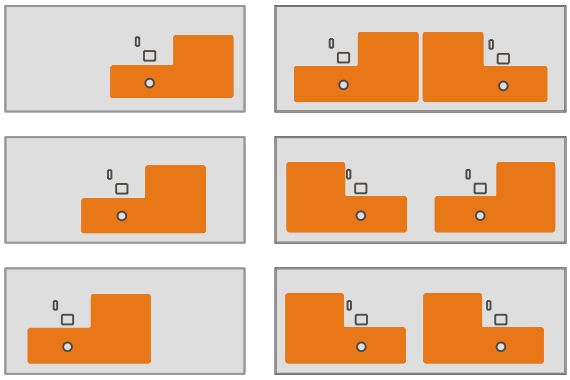
1200 mm — One workplace
1500 mm — One workplace
1800 mm — Two workplaces

AIR FLOW SCHEME



contaminated air
room air
clean air

VARIATIONS OF HEATED SURFACE LOCATION AND ARRANGEMENT



Mirrored positions are also available.

TECHNICAL SPECIFICATION

Air cleanliness class in the work chamber for suspended particle (aerosol) concentration according to ISO 14644-1	Class 5
Class of the HEPA filters according to EN 1822 -1	H14
Primary efficiency of HEPA filters for particles sized 0.3 μm according to EN 1822 -1, %	99,995
Average downflow velocity in the work chamber in operating mode / 50% mode, m/s	0,40±0,03 / 0,25±0,03
Work zone illumination, lx, not less than	2000

Modes of Operation:
Set-up - blowdown ..... Maximum fan rotation for 1 min
Operating mode..... Preset operating airflow velocity
Clean maintenance mode..... Fan in economy mode, lighting and other functions are off
Economy mode..... 50% fan capacity

Warm-up by specified time	with timer and calendar

HEATED SURFACES

Preset temperature range, °C	+35 to +45
Accuracy of preset temperature maintenance, °C	±0,3

MAIN PARAMETERS AND DIMENSIONS

Article	1E-D.006-12.0	1E-D.006-15.0	1E-D.006-18.0
Dimensions of the cabinet assembled with the stand (WxDxH), mm	**1200x710x1915**	**1500x700x1915**	**1800x700x1915**
Dimensions of the work chamber (WxDxH), mm	1130x630x660	1425x630x640	1725x630x640
Input power of the cabinet, W, not more than (exclusively of the load on the built-in outlets)	980	980	1780
Maximum acceptable load on the built-in outlets, W, not more than	1000	1000	1000

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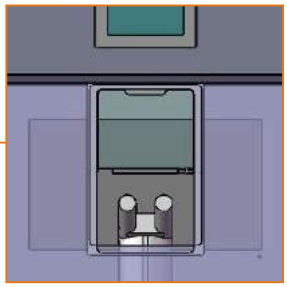
CLASS II TYPE A2

OPERATOR, ENVIRONMENT,
PRODUCT PROTECTION

Highly pure air environment is created in the work chamber to protect valuable samples, environment, and operator during ART.

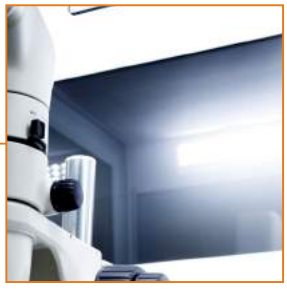
– All brands of microscopes can be installed
– Curtain for microscope
– Three-section tabletop. Center section is fixed. Side sections are featured with gas springs for convenient disinfection
– Additional options: armrest, gas supply and humidification system, 21.5” monitor



Microscope cutout is equipped with a flap ensuring cleanliness of the work zone in clean maintenance mode

Special curtain covers the microscope cutout maintaining protection efficiency of the cabinet in operating mode

Power-driven sliding front sash



Rear wall can be featured with a built-in 21.5" monitor (additional option)

1200 mm — One workplace

1500 mm — One workplace

ENERGY EFFICIENCY

EC FANS

Class II microbiological safety cabinets SAVVY^{SL} are equipped with centrifugal, energy-efficinet and low-noise EC FANS that significantly decrease operating costs as well as reduce the level of acoustic noise and vibration ensuring comfortable work of the personnel.

ADVANTAGES OF EC FANS:

- Monitoring and accurate adjustment of operating modes with the microprocessor control system
- Low energy consumption
- Low heat emission
- Low noise level
- No vibration
- Extended operating life

LOW POWER CONSUMPTION OF THE CABINET

0.112 kW

COMPARISON

	Input Power kW	Power Consumption per Year kWh[2]	CO_2 Emissions t/year[3]	SAVING	CO_2 REDUCTION
LAMSYSTEMS	0,112 [1]	233,0	0,123	30%	30%
Alternative*	0,160**	332,8	0,175		

GREEN TECH by ebmpapst

2 years WARRANTY

* Equipment with equivalent technical characteristics produced by a known manufacturer was taken for comparison.

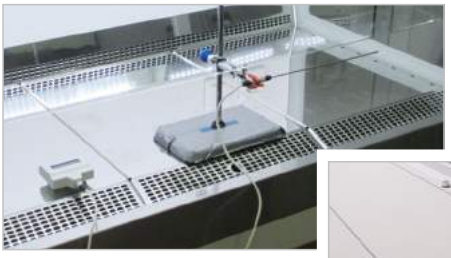
** Information was taken from the official advertising materials of the manufacturer.

[1] – The measurements are taken at operating mode whereat the fans and the work chamber lighting are on; the load on the built-in electric sockets is excluded.
[2] – 8 hours per day, 5 days, 52 weeks.
[3] – Each kWh of energy produced corresponds to 0.527 kg of CO_2 emission (source: https://www.carbonindependent.org/15.html

LOW ENERGY CONSUMPTION PROVIDES FOR LOW HEAT EMISSION REDUCING NECESSITY IN ROOM AIR CONDITIONING AND, THEREFORE, ITS COST.

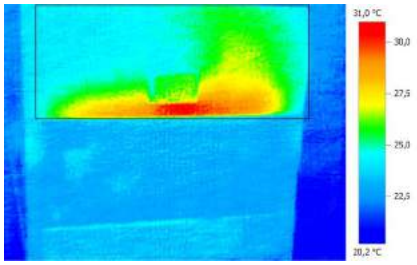
HEAT EMISSION READINGS&CALCULATIONS

Microbiological safety cabinets generate heat that may cause room temperature increase and air humidity decrease leading to operator's discomfort, loss of efficiency, fatigue, skin irritation and itching.
Low energy consumption provides for low heat emission reducing necessity in room air conditioning and, therefore, its cost.



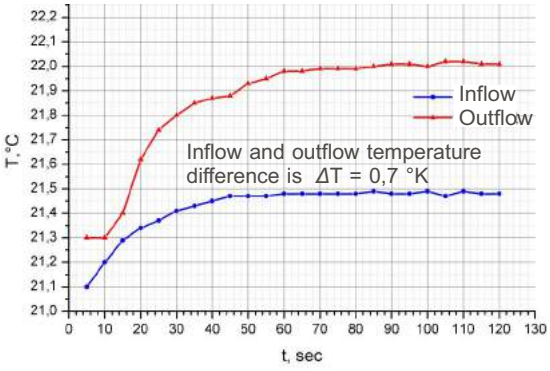
Measuring the Temperature of the Air Inflow

Measuring the Temperature of the Air Outflow



Measuring the Temperature of the Front Panel Heated Area

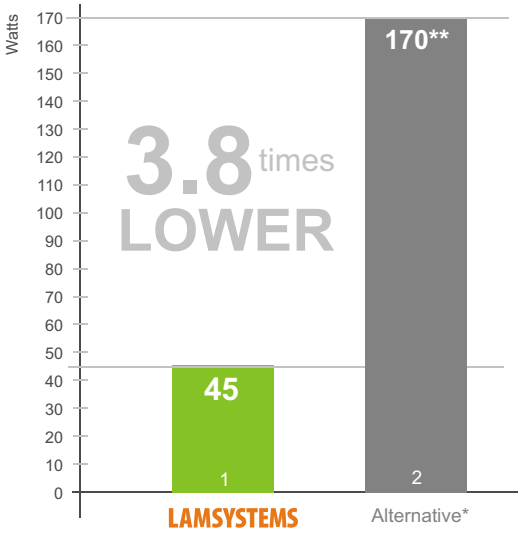
Airflow Temperature Diagram



HEAT EMISSION OF THE CABINET:

with fans and lighting on **45W**
with fans on and lighting off **25 W**
with lighting on and fans off **20 W**

COMPARISON



* Equipment with equivalent technical characteristics produced by a known manufacturer was taken for comparison.

** Information was taken from the official advertising materials of the manufacturer.

Operating desktop laser printer..... 215 W

Working person ..... 180 W

Resting person ..... 100 W

Operating monitor (19") ..... 80 W

ECO

IN THE OPERATING MODE*..... 45 W

* The measurements are taken at operating mode whereat the fans and the work chamber lighting are on; the load on the built-in electric sockets is excluded.

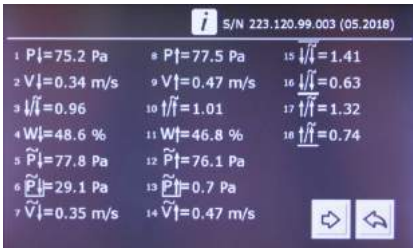
LOW NOISE LEVEL 47dBA

The level of noise in real operating environment depends on the dimensions of the operating site, on the cabinet's location as well as on the total background noise and may vary by 3-4 dB(A).

SIMPLE AND CONVENIENT SETTING OF AIRFLOW VELOCITY

The system ensures separate control of the inflow and downflow velocities as well as automatically maintains the air balance. There is no need to adjust the air balance manually and, therefore, the maintenance time in case of qualification, filter replacement or periodic verifications is sifgnificantly reduced.

HIGHLY ACCURATE MAINTENANCE OF PRESET AIRFLOW VELOCITY at any level of filter clogging and in case of changing ambient conditions (humidity, temperature, pressure).



FRONT SASH STOP

To ensure maximum safety,
the sliding front sash automatically stops in two cases:

POWER DRIVEN FRONT SASH

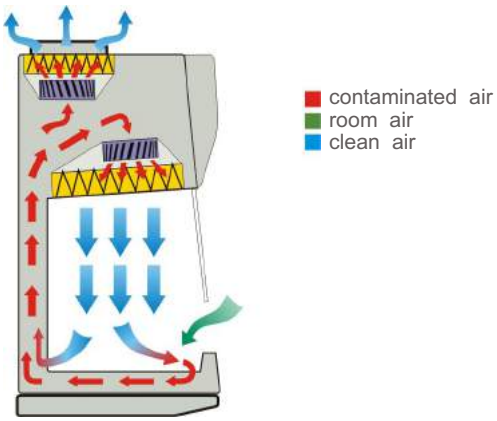
Five preset positions of the front sash:

1. OPERATING POSITION in Main Operation mode.
2. UP POSITION for work chamber loading/unloading.
3. STOP BEFORE CLOSING for safety.
4. CLOSED POSITION in clean maintenance mode or for work chamber UV irradiation.
5. DOWN POSITION for disinfection of the upper part of the front sash.

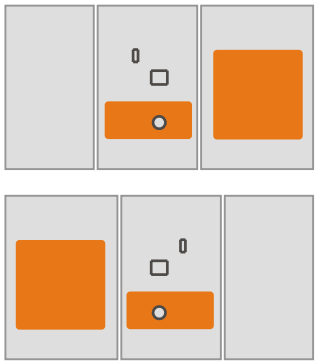
BEFORE CLOSING
Automatic stop of the front sash at 40 mm height from the surface prior to complete closing of the front opening prevents any injury of the operator's hands.

AHEAD OF OBSTACLE
The moving front sash automatically stops in case of contact with an object or a hand of the operator.

AIR FLOW SCHEME



VARIATIONS OF HEATED SURFACE LOCATION AND ARRANGEMENT



TECHNICAL SPECIFICATION

Air cleanliness class in the work chamber for suspended particle (aerosol) concentration according to ISO 14644-1	Class 5
Class of the cabinet according to EN 12469, NSF/ANSI 49	II
Type of the cabinet according to NSF/ANSI 49	A2
Class of the HEPA filters according to EN 1822-1	H14
Primary efficiency of HEPA filters for particles sized 0.3 μm according to EN 1822-1, %	99,995
Average downflow velocity in the work chamber in operating mode / 50% mode, m/s	0,47±0,03 / 0,20±0,02
Work zone illumination, lx, not less than	2000
Air recirculation, %	70
Modes of Operation: Set-up - blowdown ..... Maximum fan rotation for 1 min Operating mode ..... Specified operating airflow velocity Clean maintenance mode ..... Fan in economy mode, lighting and other functions are off Economy mode ..... 50% fan capacity	
Warm-up by specified time	preset with timer

HEATED SURFACES

Preset temperature range, °C	+35 to +45
Accuracy of preset temperature maintenance, °C	±0,3

MAIN PARAMETERS AND DIMENSIONS

Article	1E-B.006-12.0	1E-B.006-15.0
Dimensions of the cabinet assembled with the stand (WxDxH), mm	**1200x810x2095**	**1500x810x2095**
Dimensions of the work chamber (WxDxH), mm	1105x610x700	1405x610x700
Input power of the cabinet, W, not more than (exclusively of the load on the built-in outlets)	1150	1150
Maximum acceptable load on the built-in outlets, W, not more than	1000	1000
Power of the UV lamp, W	30	30

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LAMSYSTEMS is the largest manufacturer of high-tech equipment for personnel, product, and environment protection from biologically hazardous agents.

Company supports full cycle of production including design, manufacturing, sales, and maintenance services of specialized equipment such as microbiological safety cabinets, laminar flow benches, fume hoods, clean zones, etc. All produced equipment has received quality certificates.

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