

# ORIGIO ScanLab Equipment Work Stations & Cabinets...

FORTUNA IVF  
CLEAN AIR

MARS IVF  
SAFETY CLASS 2



origio

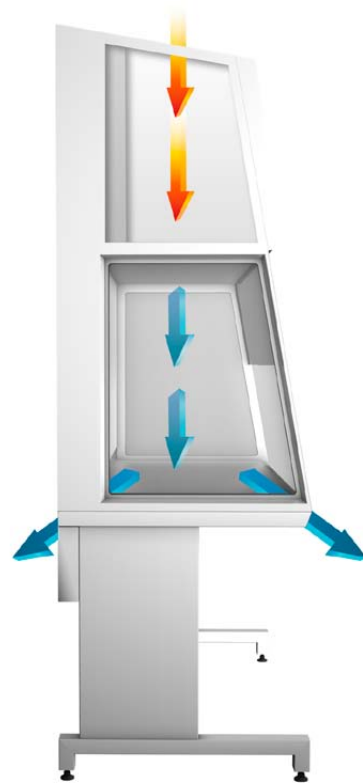
# ORIGIO ScanLab Equipment Work Stations & Cabinets ... "for the Science of Life"

**The people of ORIGIO ScanLab Equipment A/S - Denmark** having been involved in the design and manufacture of cabinets and work stations for IVF applications for over 25 years, and whose models, under various brand names, are world renowned and today lays claim to being the market leader in this specialised discipline that is the "Science of life." ■

It is from this heritage we introduce the **Fortuna-IVF** range of laminar flow cabinets and work stations together with **Mars-IVF Class 2** cabinets, incorporating the latest in energy saving and laminator technology, HEPA filtration and with optional accessories that are conducive to optimal cell viability. Microprocessor control with full visual and acoustic alarm and monitoring of air flow functions.

**Fortuna-IVF Cabinets- Vertical Flow laminar with turbulent-free air flow** giving a clean, sterile work chamber environment with complete protection of the procedures against microbiological intrusion or contamination. Low energy and noise free EC\* fans and laminator technology ensure less vibration, heat transmission and a turbulent-free air flow to the chamber. A unique front operated Pre-filter system allows easy inspection and exchange and increases the life of HEPA-filter.

The **Fortuna-IVF range of cabinets** offer the ultimate in sample protection, operator comfort and optional fittings to provide the cabinet best suited for your laboratory and its procedures.



## Working principle

The vertical clean air cabinet is a turbulence-free (laminar) vertical displacement flow of clean air in the work chamber, protecting the samples against particle contamination. During operation the front window is always open and the airflow prevents the escape of particles from the inside of the work chamber thus protecting the sample and the operator and the environment.

## Air Flow Pattern

The Fortuna IVF cabinets utilizes a revolutionary new design of digital EC fans with 110 mm deep HEPA filters. This allows for lower noise levels, better air distribution and longer filter life. When used together with our unique laminator technology the down-flow air is better balanced and more uniform, ensuring superior product protection under a turbulence free, laminar flow atmosphere allowing much lower speeds not affecting the sample temperature.

The work surface's anti-vibration characteristics improves operator comfort and also prohibits sample interference and allows work with microscopes. Noise levels are further reduced and filter life extended by having the down-flow speed set at 0.15 m/s +/- 10 % compared to others which are set at 0.35m/s +/- 20%. The digital blower system is controlled directly and precisely from the microprocessor.

This improves velocity control and ensures the monitoring and warning of any malfunctions. The cabinet can easily be adjusted from the service mode by authorised-personnel. Down flow speeds can be adjusted from 0.01 m/s up to 0.70 m/s.

## Operator Comfort

The high angled front window allows easy supervision of the both the samples and the total work area and also gives an ergonomically correct working position when seated.

With side windows, glare-free rear wall and easy visibility of the surroundings this ensures a comfortable working environment. Diffused laminator technology allows shadow free light distribution throughout the work chamber, with light adjustment of 0-2000 Lux illumination. The diffuser technology and digitally controlled fans give an unrestricted air flow of true laminarity with deviations of <10 %. The high capacity HEPA filters of 11cm depth, as opposed to a "standard" HEPA of only 7cm depth, requires 50 % less air pressure, gives a longer working life, uses less energy and ensures the lowest noise levels of < 46 dBA, contributing to a safer and stress free working environment.

Negative pressure plenum avoids leakage from even old HEPA-filter gaskets avoids contamination risks gives longer life time of the filters.

## Designed for IVF

The Fortuna IVF range of cabinets in 0.9;1.2;1.5 & 1.8 metre widths are all fitted with stainless steel work tops with integrated warming zones , available with customised uniform heating patterns to suit requirements.





## Heated Platens – “HeatPath” or “CircuStat” Systems

Precise temperature control is provided either by direct electrical heating with our exclusively designed “HeatPath” configuration or alternatively by our unique “CircuStat” system, a closed-loop thermostatic water circulator arrangement.

For both systems we provide a unique combination of 2 mm stainless steel plates together with heavy aluminium plates to ensure excellent heat transfer to the samples and avoidance of temperature over-shoot. Temperature uniformity is better than 0.5° C and precision of control better than 0.1° C at all points across the plates.

The “HeatPath” system has the display of temperature mounted on the rear wall of the work chamber and incorporates a unique multi-sensor arrangement allowing heat compensation at all the edges, over shoot avoidance and a quick reaction to any cooling of the sample.

The “CircuStat” system, with continuously circulated temperature controlled water, via the labyrinth integrated beneath the table top, gives a higher heating capacity, is less prone to temperature fluctuations and with no “over-shoot” possibilities, even at high temperature loads. The water circulation network is totally isolated from all electrical circuitry. The Start/Stop of the heating cycle, for either system is, initiated from the control panel of the cabinet and is totally isolated from all electrical circuitry.



## Microscope Installations

A Stereo microscope(s) or Inverted microscope can be installed on the work top, positioned for optimal comfort and with consideration for other equipments that may be required, i.e. micro-manipulation system, incubator, heating blocks etc.

For the installation of Inverted microscopes, a recess in the rear wall allows for ease of positioning and maximising of available work area. Anti-Vibration mounts and stands are available to optimise working protocols.

## Light Sources & Stages

A built-in light source, mounted below the table top, without intruding on the leg space for the operator, has bi-directional mirrors, focus and light intensity adjustment to ensure precise illumination for the microscope. (Light sources available from various manufacturers can also be accommodated but these have to be provided to us in Denmark.)

The stress-free glass stage built into the table top is available in 2 sizes, 80 mm diameter or 100 mm diameter. If required a heated glass stage, to 37° C can be installed as an option. Due to the influence of the down flow air a unique protective shield can be fitted to ensure minimum of temperature deviation.





## Gas Manifolds & Humidifiers

Manifolds for CO<sub>2</sub> and Humidifiers can be mounted on the rear wall of the work chamber and also Single or double flow meters with regulators for CO<sub>2</sub> and O<sub>2</sub> - too. These built-in modules avoids disturbance of the air flow and allows unrestricted work space. Secondly the built-in chamber surface is heated to 37° C to avoid cool down of sample and allow maximum moisture absorption.

## VDU Screens & Monitors

VDU screens either with articulated mounts or magnetic fixtures can be installed, allowing flexible mounting in the chamber for most ergonomic positioning. The latest technology LED 19" screens are available which are fully sealed units and offer full decontamination possibilities. The magnetic mounting type allows optimum placement and easy removal.



## Standard Option - Activated Carbon Filter & UV light

Standard options on all Fortuna models include an Activated Carbon Filter unit for removal of VOC's and UV light for decontamination and cleaning of the work chamber and the room. The auto start/stop timing facility allows for switch on/off of the cleaning and decontamination cycle when the cabinet is not in use, possibly over-night.

The UV light is well shielded and out of view which prevents exposure to the operator. If the UV light is activated during none working hours, in conjunction with the Activated Carbon Filter, 100 % VOC –free work chamber and room is guaranteed.

The Activated Carbon Filters are 7 kg capacity and ensures 1000 improved capture rate and avoids monthly supervision of performance.





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## Standard Option-Reduced speed Airflow - Stand By mode

Reduced speed airflow mode is also a standard feature, to maintain the cabinet's integrity whilst not in operational use or whilst unattended. This is activated from the microprocessor controller and also gives an indication of its status.

## Standard Option -Auto Start & Auto Stop

The Fortuna IVF can be programmed via the microprocessor to auto start and auto stop at specific times. This allows the start up of the cabinet, and being ready for use at the start of the working day and to shut down at the end. This ensures the cabinet is ready prior to commencing operational procedures and the waitingtime for the fans to attain the correct airflow parameters is minimised. Similarly, once work is complete the cabinet will shut down automatically at the time programmed.

## Standard Option-Auto Start & Auto Stop with Eco-Save™

The Fortuna IVF can incorporate the unique Eco-Save™system, a PIR (Passive infra red) motion sensor that gives hands-free start up and switch off of the fans.

This maintains the cabinets integrity, in reduced speed mode whilst not in use. When the operator places his hands through the window aperture the fans switch to full operational speed and reverts back to reduced speed on removal. This feature can save up to 80 % energy in operating costs.



## Standard Option-Anti-Vibration Tables

Anti-vibration tables are available for the 4 sizes of Fortuna IVF cabinets and are integrated within the body of the cabinet to allow for vibration free mounting of Tex Inversion microscopes without compromising the leg-space for the operator. They are designed to meet the requirements of ICSI procedures with the microscope being mounted on an isolated and equilibrated platform.

## Support Stands

A choice of 4 support stands are available for all models of Fortuna IVF cabinets, with fixed heights of 75 cm, 80 cm & 90 cm, all +5cm together with an electrically operated elevation stand with variable height adjustment, suitable for either a seated or standing working position.

## Ultra Clean Environment

The use of 11 cm high HEPA-filters, EN 1822 with efficiency at 99.999 % against 0.3  $\mu\text{m}$  particle produces a clean, sterile, work chamber environment. The high HEPA-filter gives a longer working life-time, significantly reduces noise levels and also energy consumption. ULPA filters U-15 are also available with efficiency at 99.9999 % against 0.3  $\mu\text{m}$  particles if so desired.

## Microprocessor Control

A digital fan(s) allow precise direct setting of the fan speed and gives up to 85 % more power compared to similar analogue units. The noise levels are much lower – the energy consumption is also correspondingly lower. Pressostat measurement is standard. Pressure measurement is an indirect measurement and can therefore be used as an indicator of any HEPA filter impediment. An air flow meter can be used as an alternative for the direct control of the down flow air.

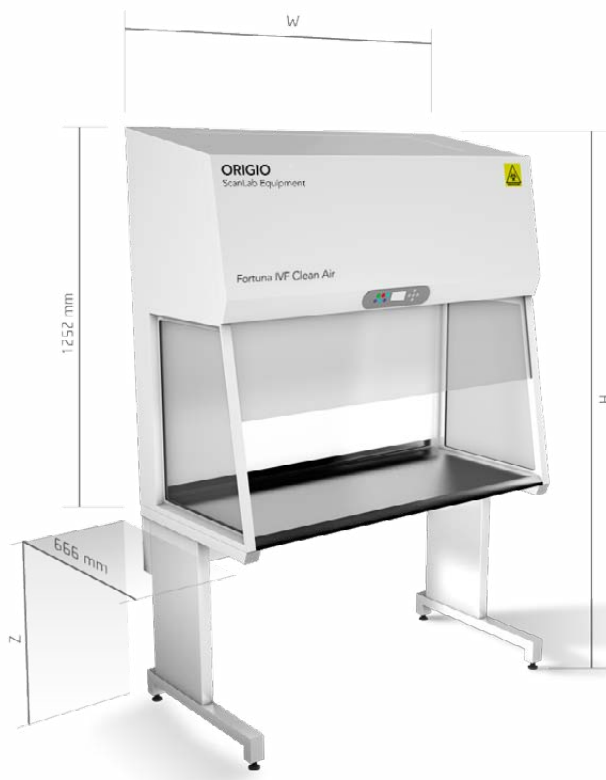
The down flow air speeds are indicated on the display and may be easily read out. Energy saving reduced speed facility, for fast, easy and safe start up of the cabinet and for maintaining cabinet integrity whilst unattended is also a standard feature.

## Eye-Level Control Panel

All cabinet functions can be viewed from either a seated or standing position without interrupting working procedures. The control panel includes functions for reduced speed, re-setable hour counter, light and UV-timer, pressure drop alarm or optional down flow speed alarms. All alarms are visual and acoustic. Service access is protected via a key pad code. The digital blower system and alarm settings are precisely controlled via the microprocessor giving excellent airflow performance.

## Compact Design & Construction

Being only 690 mm deep, the cabinet can easily be transported through 800 mm doorways also saves on valuable laboratory space. The low cabinet height allows the operator to select from a choice of support stands to suit their working attitude, seated, standing or both. The cabinet is available in 4 sizes 900, 1200, 1500 and 1800 working widths. Multiple **Fortuna IVF** cabinets can be built together giving for example a 2100 cm unit ( 900 + 1200) or (1200 + 1800) to give a 3000cm width cabinet, This makes the **Fortuna IVF** a flexible and versatile working enclosure.



Fortuna model	Width (mm)
Fortuna 900	1031
Fortuna 1200	1331
Fortuna 1500	1631
Fortuna 1800	1931

Z Support Stand Height	Height (mm)
75	1995
80	1995 + 50
90	1995 + 150

## Service

Service Installation and maintenance must only be performed by accredited personnel who are certificated by ORIGIO ScanLab Equipment A/S and who have been factory trained ask for certificate.

All service operations and adjustments are performed from the front of the cabinet. This includes exchange of HEPA-filters, exchange or adjustment of circuit boards, sensors and DOP valves. All alarms and fan speeds changes are adjusted from the microprocessor control panel, the Service Mode of which is password protected.

Model	Unit	F900	F1200	F1500	F1800
External dimensions (DxWxH)	mm	1031x666x1252	1331x666x1252	1631x666x1252	1931x666x1252
Working chamber, dimensions (DxWxH)	mm	564x900x636	564x1200x636	564x1500x636	564x1800x636
Working height	m	Work height off 0.75-1.10 in 2.50 rooms			
Front opening	mm	350			
Air velocity, vertical flow	m/s	0.15 m/s (adjustable 0.01-0.70 m/s)			
Air velocity, deviation	±%	10	10	10	10
Noise level, ISO 6081	dB(A)	<46	<46	<48	<48
Light intensity variable	Lux	0-2000	0-2000	0-2000	0-2000
HEPA filters, EN 1822		Efficiency is 99.999 % against 0.3 µm particle H-14 size 99.995 % in MPPS			
Clean room box design		Yes	Yes	Yes	Yes
Excellent light distribution		Yes	Yes	Yes	Yes
Window cleanable on both sides		Yes (side windows only if space around allows cleaning)			
Voltage/frequency	V/Hz	220-240/50-60 or 110-120/50-60			
Power consumption	W	125	150	175	200
Fuses	A	10	10	10	10
Net weight	kg	225	250	275	300
Shipping volume	m <sup>3</sup>	2.2	2.9	3.2	4.1
Window material		Hardened/laminated safety glass			
Cabinet material		Polyester coated steel/AISI 304 Stainless steel			

# Choose your cabinet

1



## Step 1

Choose cabinet working width and type, Fortuna or Mars and 900, 1200, 1500 or 1800 mm

11



## Step 11

Choose other accessories like Heat blocks, glass incubators, etc.



2



## Step 2

Choose Heat source of work top Electric-heating or "Circu-Stat" heating for the enlarged heated area

10



## Step 10

Choose Electric-sockets

3



## Step 3

Choose Humidifying Gas system 0, 1 or 2

9



## Step 9

Choose options of UV-light and/or Carbon filtration

4



## Step 4

- 1) Built-in
- 2) Not built-in
- 3) Own light source built-in

8



## Step 8

Support stand Standard 75 + 5 or upgrade to 80 or 90 +5 cm or Electrical operated 75-105 cm

5



## Step 5

Choose No heat off Glass-stage, Normal heat or Tokai heat



## Step 6

Screen built-in as VDU as magnetic or in back wall mounted or none

7



## Step 7

Specify choice of microscope - brand and model number

6

## Please choose heating system and size of cabinet

Cat.no.	Specification
9.800.100.000	Fortuna 0.9 IVF with water heating
9.800.100.001	Fortuna 0.9 IVF with electric heating
9.800.100.002	Fortuna 1.2 IVF with water heating
9.800.100.003	Fortuna 1.2 IVF with electric heating
9.800.100.004	Fortuna 1.5 IVF with water heating
9.800.100.005	Fortuna 1.5 IVF with electric heating
9.800.100.006	Fortuna 1.8 IVF cabinet with water heating
9.800.100.007	Fortuna 1.8 IVF cabinet with water heating and 2 microscope preparations
9.800.100.008	Fortuna 1.8 IVF with electric heating
9.800.100.009	Fortuna 1.8 IVF with electric heating and 2 microscope preparations
9.800.100.110	Fortuna 1.8 IVF with electric heating and 2 microscope preparations - 1 is inverted
9.800.100.111	Fortuna 1.2 IVF with electric heating 1 inverted microscope preparations

Cat.no.	Specification
9.800.100.100	Mars 900 IVF with circuit liquid based heating system
9.800.100.101	Mars 900 IVF with electric heating system
9.800.100.102	Mars 1200 IVF with circuit liquid based heating system,
9.800.100.103	Mars 1200 IVF with electric heating system
9.800.100.104	Mars 1500 IVF with circuit liquid based heating system
9.800.100.105	Mars 1500 IVF with electric heating system
9.800.100.106	Mars 1800 IVF with circuit liquid based heating system
9.800.100.107	Mars 1800 IVF with circuit liquid based heating system with 2 microscope stands
9.800.100.108	Mars 1800 IVF with electric heating system
9.800.100.109	Mars 1800 IVF with electric heating system with 2 microscope stands

## Please choose none or the stand for wanted work height

Cat.no.	Specification
9.000.020.011	Adjustable support stand 80-85 cm 900
9.000.020.012	Adjustable support stand 80-85 cm 1200
9.000.020.013	Adjustable support stand 80-85 cm 1500
9.000.020.014	Adjustable support stand 80-85 cm 1800
9.000.020.161	Adjustable support stand 90-95 cm 900
9.000.020.162	Adjustable support stand 90-95 cm 1200
9.000.020.163	Adjustable support stand 90-95 cm 1500
9.000.020.164	Adjustable support stand 90-95 cm 1800
9.000.020.101	Electrical elevation stand 75-105 cm 900
9.000.020.102	Electrical elevation stand 75-105 cm 1200
9.000.020.103	Electrical elevation stand 75-105 cm 1500
9.000.020.104	Electrical elevation stand 75-105 cm 1800



## Other IVF Accessories

Cat.no.	Specification
9.000.020.117	UV-light mounted on the backwall with timer
9.001.020.112	LAF-LED Screen 19 inches with magnetic mounting 2,5 m cables and preparation
9.001.120.113	LAF-LED Screen 19 inches with mounted in back wall
9.800.500.001	ScanLab Light source build in the table top incl 2 extra bulb
9.001.120.114	Microscope own light source build in the table top
9.001.701.745	Heated path through tunnel mounted in Backwall
9.001.701.746	Preparation for building in incubator in backwall
9.001.701.747	Preparation for monitor/camera without choice of monitor/camera
9.001.811.234	Enlarged Heatzone



## Charcoal Option

Mounted on airlet making VOC free environment

Cat.no.	Specification
9.000.025.012	Charcoal filter and kit, Fortuna 900 and 1200
9.000.025.013	Charcoal filter and kit, Fortuna 1500 and 1800
9.000.025.016	Main Charcoalfilter Fortuna 900-1200
9.000.025.017	Main Charcoalfilter Fortuna 1500-1800 setof 2 for one



## El-Outlets

Mounted in the cabinet

- always order min 1 left and 1 right

Cat.no.	Specification
9.000.020.021	Electric outlet, single Danish left
9.000.020.022	Electric outlet, single German left
9.000.020.023	Electric outlet, single British left
9.000.020.024	Electric outlet, single French left
9.000.020.025	Electric outlet, single Swiss left
9.000.020.026	Electric outlet, single US left
9.000.020.027	Electric outlet right side mounting as left side



## Antivibration Tables

Cat.no.	Specification
9.001.701.748	Antivibration table for F/M 900
9.001.701.749	Antivibration table for F/M 1200
9.001.701.750	Antivibration table for F/M 1500
9.001.701.751	Antivibration table for F/M 1800



## Alu Blocks

Cat.no.	Specification
9.001.120.115	Alu blocks - Round block holds 7 tubes of 17 Ø Falcon 352001
9.001.120.116	Alu blocks - Round block holds 12 tubes of 12 Ø Falcon 352003
9.001.120.117	Alu blocks - Round block holds 4 tubes of 25 mL-23,5 mm Ø
9.001.120.118	Alu blocks - Rectangular block for portable incubator holds 12 tubes Ø 12 mmØ Falcon 352003/Nunc 343923
9.001.120.119	Alu blocks - Rectangular block for portable incubator holds 10 tubes Ø 17 mmØ Falcon 352001
9.001.120.120	Alu blocks - Block for swim-up test, 45° angle, holds 2 centrifuge tubes of 17 mm Falcon 352095
9.001.120.122	Alu blocks - Holds 2 culture dishes - Falcon 353001
9.001.120.123	Alu blocks - Holds 2 culture dishes - Nunc 150318
9.001.120.124	Alu blocks - Holds 1 center well dish -Falcon 353653
9.001.120.125	Alu blocks - Holds 1 60 Ø culture dish - Falcon 353002 and Nunc 150288
9.001.120.126	Alu blocks - Holds 1 4-well dish - Falcon 353654
9.001.120.127	Alu blocks - Holds 1 4-well dish - Nunc 176740
9.001.120.128	Alu blocks - Holds 1 5-well dish - MiniTube 19021/0005
9.001.120.130	Alu blocks - Hold 5 flushing syringes of 20 mL/22.5 mm Ø
9.001.120.131	Alu blocks - Hold 5 flushing syringes of 10 mL/18 mm Ø
9.001.120.151	Warming block for 1 gas Humidfier
9.001.120.151	Warming block for 2 gas Humidifiers
9.001.120.133	Alu blocks - Holds 1 IVF MediaFlask of 125 mL
9.001.120.134	Alu blocks - Holds 2 media flasks of 60 mL
9.001.120.135	Alu blocks - Holds 4 media flasks of 10mL
9.001.120.137	Glass incubator hood - For gassing culture dishes Ø140 mm- height 75 mm
9.001.120.138	Glass incubator hood - For gassing culture dishes Ø140 mm- height 130 mm
9.001.120.139	Glass incubator hood - For gassing culture dishes Ø140 mm- height 25 mm
9.001.120.141	Humidifier with 2 gas flow meter in alu block builded in back wall incl heating
9.001.120.142	Humidifier with 1 gas flow meter in alu block builded in back wall incl heating
9.800.500.008	Heated glass above light source (Tokai like)
9.001.120.145	Heated glass Tokai above light source





# Mars-IVF Class 2 Cabinets the Ultimate in Design and Construction for the "Science of Life"

Developed from the world renowned Mars range of Class 2 cabinets and specifically refined and constructed for In-Vitro fertilisation techniques. ■



**The Mars-IVF Class 2** provides a comfortable working environment with maximum protection for the operator, the embryo and the laboratory. Built and tested according to the EN 12469 Standard, the **Mars IVF Class 2** range offers today's Scientist's the best of Danish design and engineering.

The **Mars-IVF Class2** is a dual HEPA filter cabinet and has a re-circulated air flow configuration with 70% being re-circulated and 30% exhausted via a HEPA exhaust filter. The filter is surrounded by an area of negative pressure to ensure no leakages can occur around the seals. An Activated Charcoal filter can also be fitted on the exhaust side of the airflow, facilitating the removal of VOC's from both the work chamber and the laboratory. To meet the requirements of BS EN 12469 an additional HEPA exhaust filter can be fitted also.

## Ultimate Clean Air Performance

A unique laminator system ensures that the down flow is uniform and balanced, thus ensuring that embryo's are well protected by turbulent free Laminar flow, clean air and with improved anti vibration performance.

The latest energy saving EC fans give improved airflow characteristics which allow reduced speeds which equate to lower noise levels and prolonged filter life. An air speed of  $0.28\text{m/s} \pm 10\%$  (min  $0.25\text{m/s}$ ) is achieved as compared to  $0.35\text{m/s} \pm 20\%$  from other comparable cabinets. The digital fan system is directly and precisely controlled from the microprocessor, ensuring accuracy of attenuation, constant monitoring and instant warning of any malfunction.

## Optimal Operator Comfort

- Angled front window that gives correct ergonomic working position
- Side windows and glare free rear wall for ultimate visibility & comfort
- Diffused laminator allows shadow-free, variable light distribution in the chamber
- Push button, electrically operated front window with fully open/closed positions
- Easy cleaning and decontamination
- Large work area with air grills on rear wall
- Maximum Operator Safety
- Down flow & exhaust air constantly monitored via airflow sensors
- Visual & acoustic alarms to warn of any unsafe airflow conditions
- On externally ducted installations, provision of 3<sup>rd</sup> pressure sensor in ducting
- Potential free contacts for link to BMS or central alarm system
- Designed for IVF
- Vibration free by unique 3-4 blower EC technology
- Noise level below 53 dBA for the highest comfort



The ergonomically correct sloping front and glare-free lighting gives a comfortable, stress-free working position when either seated or standing. ■

The **Mars-IVF Class 2** range of cabinets in 0.9;1.2;1.5 & 1.8 metre widths are all fitted with stainless steel work tops with integrated warming zones , available with customised uniform heating patterns to suit requirements.

The electrically operated front screen window can be adapted for microscope use with ocular access and seal or alternatively an inner "split" screen can be installed for using a microscope and quickly removed for alternative applications. This latter option does not require any modification to the standard front screen.



## Heated Platens – "HeatPath" or "CircuStat" Systems

Precise temperature control is provided either by direct electrical heating with our exclusively designed "HeatPath" configuration or alternatively by our unique "CircuStat" system, a closed-loop thermostatic water circulator arrangement.

For both systems we provide a unique combination of 2 mm stainless steel plates together with heavy aluminium plates to ensure excellent heat transfer to the samples and avoidance of temperature over-shoot. Temperature uniformity is better than 0.5° C and precision of control better than 0.1° C at all points across the plates.

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VDU screens either with articulated mounts or magnetic fixtures can be installed, allowing flexible mounting in the chamber for most ergonomic positioning. The latest technology energy saving, and clearest picture LED 19" screens are available. The magnetic fixture screens are fully sealed units and offer full decontamination possibilities. The magnetic mounting type allows optimum placement and easy removal.



### Standard Option - Activated Carbon Filter & UV light

Standard options on all Mars-IVF Class 2 models include an Activated Carbon Filter unit for removal of VOC's and UV light for decontamination and cleaning of the work chamber and the room. The auto start/stop timing facility allows for switch on/off of the cleaning and decontamination cycle when the cabinet is not in use, possibly over-night. The UV light is well shielded and out of view which prevents exposure to the operator. If the UV light is activated during none working hours, in conjunction with the Activated Carbon Filter, 100 % VOC -free work chamber and room is guaranteed. The Activated Carbon Filters are 7 kg capacity and ensure extended usage avoiding monthly maintenance and increases the VOC capture performance by 1000 times as to conventional systems.

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## Standard Option-Reduced Speed Airflow

Reduced speed airflow mode is also a standard feature, to maintain the cabinet's integrity whilst not in operational use or whilst unattended. This is activated from the microprocessor controller and which gives an indication of its status.

## Standard Option-Auto Start & Auto Stop

The Mars-IVF Class 2 can be programmed via the microprocessor to auto start and auto stop at specific times. This allows the start up of the cabinet, and being ready for use at the start of the working day and to shut down at the end. This ensures the cabinet is ready prior to commencing operational procedures and waiting for the fans to attain the correct airflow parameters is minimised. Similarly, once work is complete the cabinet will shut down automatically at the time programmed.

## Standard Option – Auto Start & Auto Stop with Eco-Save™

The Mars-IVF Class 2 can incorporate the unique Eco-Save™ system, a PIR (Passive infra red) motion sensor that gives hands-free start up and switch off of the fans. This maintains the cabinet's integrity, in reduced speed mode whilst not in use. When the operator places his hands through the window aperture the fans switch to full operational speed and reverts back to reduced speed on removal. This feature can save up to 80 % energy in operating costs.

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## Support Stands

A choice of 4 support stands are available for all models of Mars-IVF Class 2 cabinets, with fixed heights of 75 cm, 80 cm & 90 cm, all +5 cm together with an electrically operated elevation stand with variable height adjustment, suitable for either a seated or standing working position.

## Accessories & Options

Quality accessories and options allow you to customise the Mars-IVF Class 2 cabinets to suit your exact requirements and applications for your laboratory:

- Stainless steel or aluminium work tops
- Integrated warming or cooling plates
- Customised heating/cooling zones
- Direct electrical or "Circu-Stat" water circulating heating systems
- Stereo or Inverted microscopes
- Electric sockets on rear wall
- CO<sub>2</sub> manifold & flow meters
- VDU's flat screens, mounted/movable, internal or external
- Support stands fixed height versions or electrical variable height
- Built in Carbon filter mounted on top of cabinet, to remove VOC's
- UV light for decontamination with shield
- Built in CO<sub>2</sub> Mini Incubator, 14 litres mounted on rear wall or side window
- Built in light source with stress-free glass stage
- Anti-vibration tables for all models
- Tokai heated glass stage

**Accessories include: glass hoods, warming blocks, tubes & culture dishes etc. Please see page 13-17 for more information and choice of accessories.**



Mars model	Width (mm)
Mars 900	1003
Mars 1200	1305
Mars 1500	1610
Mars 1800	1915

Z Support Stand Height	Height (mm)
725	1999
825	2099
925	2199

## Ultra Clean Environment

The use of 11 cm high HEPA-filters, EN 1822 with efficiency at 99.999 % against 0.3 µm particle produces a clean, sterile, work chamber environment. The high HEPA-filter gives a longer working life-time, significantly reduces noise levels and also energy consumption. ULPA filters U-15 are also available with efficiency at 99.9999 % against 0.3 µm particles if so desired.

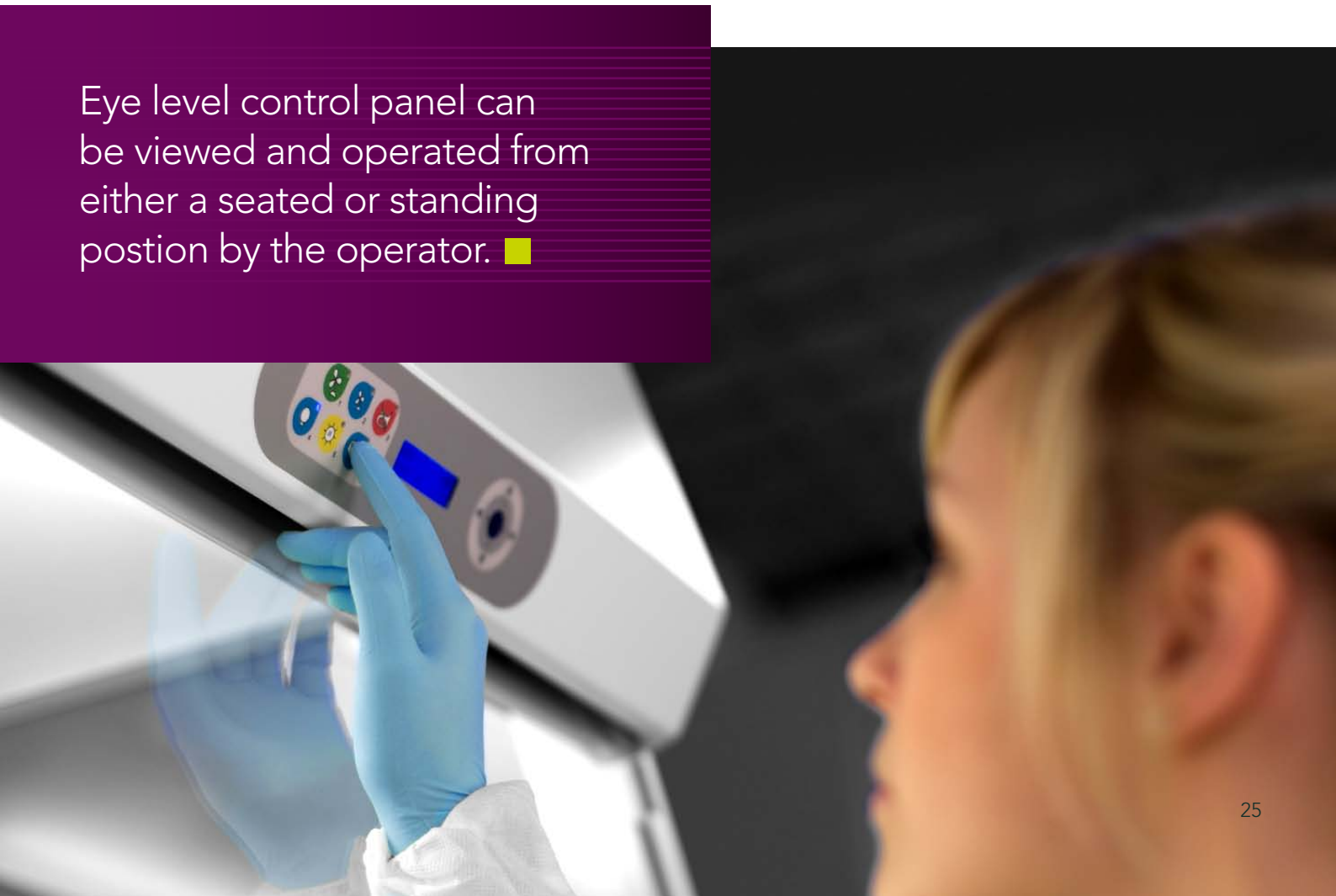
## Microprocessor Control

A digital EC fan(s) allow precise direct setting of the fan speed and gives up to 85 % more power compared to similar analogue units. The noise levels are much lower – the energy consumption is also correspondingly lower. Air flow meter is used for the direct control including visual and acoustic alarms for incorrect down flow and the exhaust air. The down flow and exhaust air speeds are indicated on the display and may be easily read out. Energy saving reduced speed facility, for fast, easy and safe start up of the cabinet and for maintaining cabinet integrity whilst unattended is a standard feature.

## Eye-Level Control Panel

All cabinet functions can be viewed from either a seated or standing position without interrupting working procedures. The control panel includes functions for reduced speed, re-settable hour counter, light and UV-timer, pressure drop alarm or optional down flow speed alarms. All alarms are visual and acoustic. Service access is protected via a key pad code. The digital blower system and alarm settings are precisely controlled via the microprocessor giving excellent airflow performance.

Eye level control panel can be viewed and operated from either a seated or standing position by the operator. ■





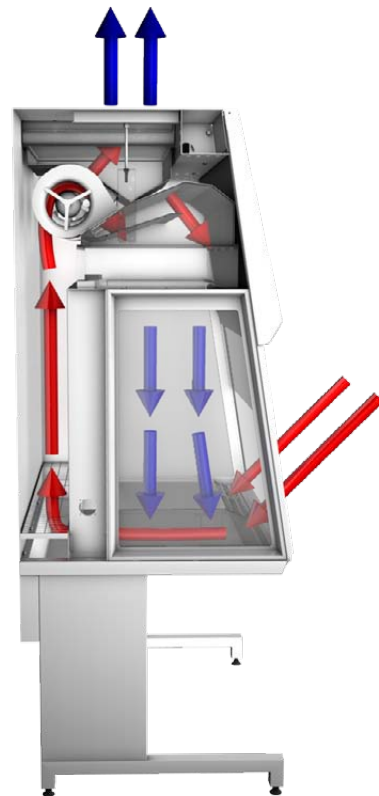
## Compact Design & Construction

Being only 790 mm deep, the cabinet can easily be transported through 800 mm doorways also saves on valuable laboratory space. The low cabinet height allows the operator to select from a choice of support stands to suit their working attitude, seated, standing or both. The cabinet is available in 4 sizes 900, 1200, 1500 and 1800 working widths. Multiple **Mars-IVF Class 2** cabinets can be built together giving for example a 2100cm unit ( 900 + 1200) or (1200 + 1800) to give a 3000 cm width cabinet, This makes the **Mars-IVF Class 2** series the most flexible and versatile working enclosures that conform to all standards for personal, product and environmental protection available today.

## Air Flow Pattern

The Mars-IVF Class 2 cabinets utilize a revolutionary new design of digital EC fans with 110 mm deep HEPA filters. This allows for lower noise levels, better air distribution and longer filter life. When used together with our unique laminator technology the down flow air is better balanced and more uniform, ensuring superior product protection under a turbulence free, laminar flow air atmosphere.

The work surface's anti-vibration characteristics improves operator comfort and also prohibits sample interference. Noise levels are further reduced and filter life extended by having the down-flow speed set at 0.28m/s +/-10% (min 0.25 m/s) compared to others which are set at 0.35m/s +/- 20% (min 0.25m/s). The digital blower system is controlled directly and precisely from the microprocessor. This improves velocity control and ensures the monitoring and warning of any malfunctions. The cabinet can easily be adjusted from the service mode by authorized personnel. Down flow and In flow speeds can be adjusted from 0.01 m/s up to 0.70 m/s.



## Service

Service Installation and maintenance must only be performed by accredited personnel who are certificated by ORIGIO ScanLab Equipment A/S and who have been factory trained ask for certificate.

All service operations and adjustments are performed from the front of the cabinet. This includes exchange of HEPA-filters, exchange or adjustment of circuit boards, sensors and DOP valves. All alarms and fan speeds changes are adjusted from the microprocessor control panel, the Service Mode of which is password protected.

Model	Unit	M900	M1200	M1500	M1800
External dimensions (DxWxH)	mm	798x1003x1248	798x1303x1248	798x1603x1248	798x1903x1248
Working chamber, dimensions (DxWxH)	mm	650x900x720	650x1200x720	650x1500x720	650x1800x720
Working height	m	Work height off 0.75-1.10 in 2.50 rooms			
Front opening	mm	200 optional 300			
Air velocity, vertical flow	m/s	0,28 (adjustable 0,25-0,55)			
Air velocity, deviation	±%	10	10	10	10
Down flow rate	m <sup>3</sup> /h	500	650	810	975
Exhaust flow rate	m <sup>3</sup> /h	260	350	440	520
Noise level, ISO 6081	dB(A)	<53	<53	<54	<54
Light intensity variable	Lux	0-2000	0-2000	0-2000	0-2000
HEPA filters, EN 1822		Efficiency is 99.999 % against 0.3 µm particle H-14 size 99.995 % in MPPS			
Clean room box design		Yes	Yes	Yes	Yes
Excellent light distribution		Yes	Yes	Yes	Yes
Electrical sliding windows		Yes	Yes	Yes	Yes
Window cleanable on both sides		Yes (side windows only if space around allows cleaning)			
Voltage/frequency	V/Hz	220-240/50-60 or 110-120/50-60			
Power consumption	W	150	175	200	225
Fuses	A	10	10	10	10
Net weight	kg	225	250	275	300
Shipping volume	m <sup>3</sup>	2.2	2.9	3.2	4.1
Window material		Hardened/laminated safety glass			
Cabinet material		Polyester coated steel/AISI 304 Stainless steel			



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