

# Animal IVF Combined Catalogue

**ESCO**  
MEDICAL



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# About Esco

Since the establishment of Esco in 1978, we never stopped developing, providing, and delivering innovative solutions. From one, we have progressed into five business units with a worldwide presence, namely Esco Scientific, Esco Healthcare, Esco Medical, Esco Aster, and Esco Ventures—remaining true to our tagline “World-class. Worldwide.”

This 2020, we are shifting from Esco Group of Companies to **Esco Lifesciences Group**, carrying a new tagline “**Improving lives through science.**” The transformation of the company name and brand signifies Esco’s vigor in keeping up, responsive, and adaptive with the fastchanging world while keeping focused on its mission to deliver enabling technologies and provide service all over the world—and improve lives through science.

## In Esco Animal IVF, we value life.

During the past years, evident shifts in acceptance and usage of in vitro technologies have been observed. A notable number of laboratories are making the change to in vitro production as newer technologies emerge.

With the extent of application from research to animal breeding to conservation medicine, assisted reproductive technology (ART) in animals is rapidly growing. Esco Animal IVF, as part of Esco Group of companies, aims to be the leading manufacturer of innovative equipment to animal IVF laboratories and animal breeding companies.

Esco Animal IVF products are designed to meet the demands of IVF laboratory conditions. We aim at prioritizing advancement and safety of practice to give all around solutions for animal assisted reproductive technology.



# IVF Application

*In vitro* fertilization (IVF), a type of assisted reproductive technology, is a process of fertilization where an egg is combined with sperm inside a laboratory with controlled environment conditions. The process involves monitoring and stimulating the ovulatory process, removing an ovum or ova from the ovaries and letting sperm fertilize the eggs in a laboratory setting. After the fertilized egg (zygote) undergoes embryo culture for 2–6 days, it is implanted in the same or a different uterus, with the intention of establishing a successful pregnancy.

IVF is a form of technology used for infertility treatment and gestational surrogacy. It is a useful technique for the following purposes:



A means to study how to improve current culture systems in order to have higher pregnancy and birth rates. Moreover, ART like IVF is a good technique in studying sperm/egg interaction, and the basic xecular and cellular mechanisms of mammalian fertilization.



Genetic improvement wherein livestock with superior genetics can be bred with shorter generation intervals as a means of growing food production and minimizing animal wastage.



Eliminate risk of disease transmission and overcome certain biological problems. Case in point is when IVF is done in an infected animal or has an impaired reproductive system; the embryo transferred (with proper screening) to a surrogate animal, is still able to carry the superior qualities of the animal leaving behind possible infection spread.



Conservation Tool for producing offspring of endangered animals, sterile animals or animals with low reproductive performance. Through the field of Conservation Medicine, assisted reproductive technologies are used to help critically endangered species to avoid extinction.

# General Workflow for Animal *In Vitro* Fertilization



Media Preparation



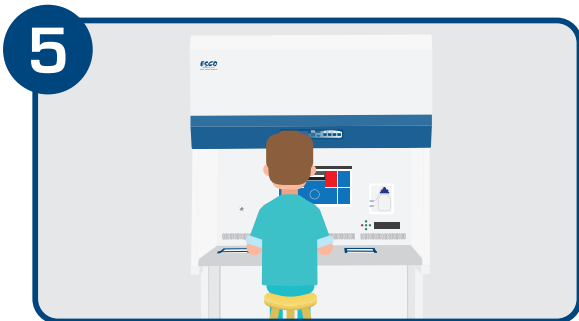
Oocyte Collection



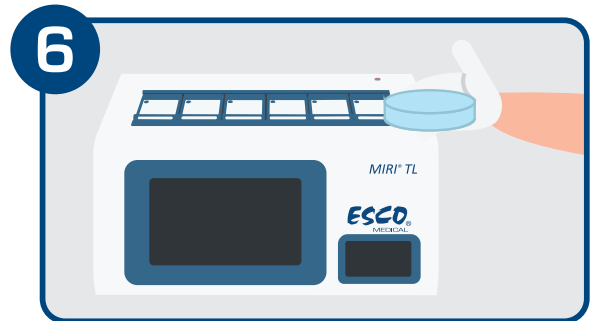
Oocyte Maturation



Sperm Preparation



Fertilization



Embryo Culture



Embryo Transfer

# MIRI<sup>®</sup> TL

MIRI<sup>®</sup> TL is a Time-Lapse incubator that monitors embryo development. The MIRI<sup>®</sup> TL, optimized for clinical and IVF procedures, is designed to support existing work and quality assurance routines. This value-added treatment provides the most unique incubation environment with the market's most secure and safest procedures. It lessens disturbance and minimizes stressful factors that may be introduced when taking the dishes out of the incubator. This incubation system also ensures predictability in the daily handling and currently offers the market's lowest cost of ownership.

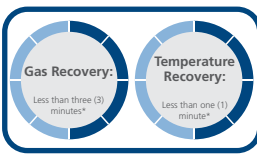


## Unique Incubation Environment

- Has independent multi-chamber system.
- Gas recirculation through VOC/HEPA filters and UV light.
- Built-in gas mixer. Premixed gas is not required.

**MIRI<sup>®</sup> TL6:** 6 Individual chambers.

**MIRI<sup>®</sup> TL12:** 12 Individual chambers.



## Unprecedented Faster Recovery

- Excellent recovery time for both temperature and gas parameters.
- Opening one chamber will have no impact on the rest of the system.
- Heated upper lid and bottom plate for excellent temperature regulation and uniformity.

### 2 Temperature Mode Options:

- **Single:** Uniform setpoints for all 6/12 (six/twelve) chambers.
- **Multi:** Individual setpoints for each chamber.

**Gas recovery:** less than three (3) minutes.

**Temperature recovery:** less than one (1) minute.

\*When the lid has not been open for more than 30 sec



## Sophisticated Annotation Tools

- Freedom to personalize instrument and parameter settings.
- Do a side-by-side comparison and compare actual timings to ideal.

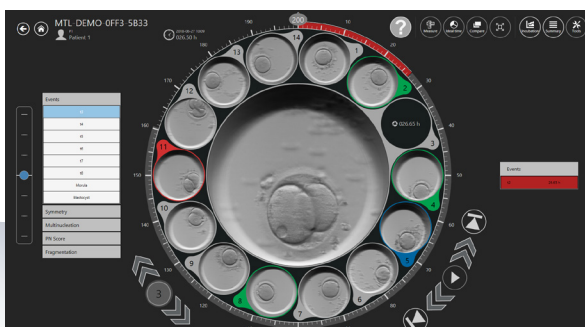


## Quality checking is easy

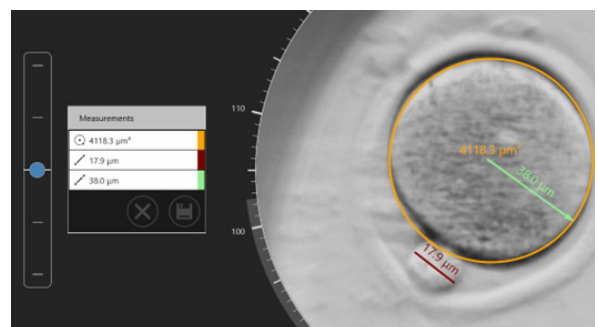
- Has 6/12 temperature sensors to ensure constant temperature stability.
- Independent PT1000 sensor and gas sample port for external validation of each chamber.
- Built-in pH measuring system.
- Data logging system.

## Embryo Analysis and Evaluation System

The MIRI<sup>®</sup> TL Viewer Software is a simple yet sophisticated information-providing tool that can help embryologists process the data generated. You can review, annotate and compare the morphokinetic parameters of each embryo to select or deselect embryos for transfer and export data for retrospective analysis.



Navigation through the stacked timeline is easy and intuitive as the revolver shows the videos of the 14 wells of one single CultureCoin<sup>®</sup>. You can play the individual videos, annotate and compare each single embryo. *Shown on the image is a magnified view of embryo #3*



### Measurement Tool

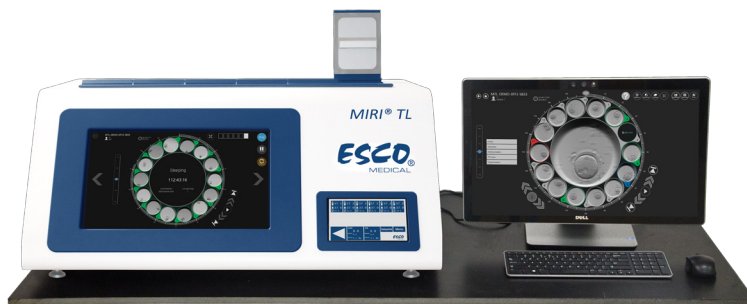
The user can now conduct precise measurement procedures to ensure the most optimal embryo development.

## High Quality Airstream via the VOC/HEPA Filter:



Volatile Organic Compounds or VOCs are toxic to an embryo. VOCs attach directly to DNA and this can be detrimental to embryo development. The MIRI® TL is specially equipped with VOC/HEPA filter to help eliminate harmful VOCs and particulates.

This equipment is a CE-marked device and is in conformity with the essential requirements of the medical devices EU regulation 2017/745.



## General Specifications

Specifications	MIRI® TL6	MIRI® TL12
Overall Dimensions (W x D x H)	805 x 590 x 375 mm (31.7 x 23.2 x 14.8")	950 x 685 x 375 mm (37.4 x 27.0 x 14.8")
Chamber Dimensions	120 x 90 x 26 mm (4.7 x 3.5 x 1")	
Power Supply	115/230V, 50/60 Hz	
Power Consumption	330 W	650 W
Temperature Control Range	28.7 - 41.0 °C	
Gas Consumption (CO <sub>2</sub> ) *	< 2 L/h	
Gas Consumption (N <sub>2</sub> ) **	< 5 L/h	
CO <sub>2</sub> Control Range	2.9% - 9.9%	
O <sub>2</sub> Control Range	2.0% - 20.0%	
Input Gas Pressure	0.4 - 0.6 bar (5.80 - 8.70 PSI)	
Built-in Microscope	Zeiss 20x, objective has numerical aperture of 0.35, specialized for 640 nm illumination	
Embryo Illumination	0.064s per image, using 1W single red LED (635nm)	
Camera Resolution	1920 x 1200. Monochrome, 12-bit, IDS system	
Optics Tube Ratio	3.00 px/μm	
Imaging Focal Planes	5, 10 and 20min intervals in 3, 5 and 7 focal planes	
Number of pixels in stored image	670 x 670	860 x 860

\* Under normal condition (CO<sub>2</sub> set point reached at 6.0%, all lids closed).

\*\* Under normal condition (O<sub>2</sub> set point reached at 5.0%, all lids closed).

## Ordering Information

MIRI® TL Time-Lapse Incubator		
Item Code	Model Code	Description
Device		
2070091	MRI-TL-MN-6C-8	MIRI® Time-Lapse Incubator, Mini, 6 Chambers, 230 V, 50/60 Hz
2070092	MRI-TL-MN-6C-9	MIRI® Time-Lapse Incubator, Mini, 6 Chambers, 115 V, 50/60 Hz
2070100	MRI-TL-12C-8	MIRI® Time-Lapse Incubator, 12 Chambers, 230 V, 50/60 Hz
2070101	MRI-TL-12C-9	MIRI® Time-Lapse Incubator, 12 Chambers, 115 V, 50/60 Hz
Accessories		
1320011	MRA-1007	VOC/HEPA filter (recommended to be changed every 3 months)
1320088	MRI-CC	CultureCoin® for Time-Lapse of 14 embryos (25 pcs. per pack)
1320045	MRI-GA	MIRI® GA CO <sub>2</sub> /O <sub>2</sub> & Temperature Validation Unit, 115V/ 230V
MIRI® TL Viewer and Server		
Item Code	Model Code	Description
2070042	MRI-VIEWER	MIRI® Time-Lapse Viewer
1320095	MRI-SERVER	MIRI® Time-Lapse Server

# CultureCoin®



## CultureCoin®, a Culture Dish, exclusively designed for MIRI® TL

- Holds up to 14 embryos with individual numbered wells (1-14).
- For single and separated culture where each embryo are cultured in its own environment.
- Ergonomic design for easy handling and location of embryos.
- Separate well for pH measurements.
- Corona plasma treated surface for the effective prevention of bubble formation.
- Packed in 1 dish pouches and delivered in boxes of 25 pcs.

## General Specifications

Overall dimensions (Diameter x Height)	Ø 71 x 10 mm
CultureCoin® weight in total	13.8 grams
Material	Styrene Methyl Methacrylate (SMMA)
Incubation Temperature Range	28.7 - 40.0 °C
Incubation CO <sub>2</sub> Range	1.9 - 10.0%
Incubation O <sub>2</sub> Range	4.9 - 20.0%
Sterilization Method	Gamma Irradiation
Lifetime	2 years
Biocompatibility Tests	1. Mouse Embryo Assay (MEA) test with thawed 1-cell mouse embryos. Acceptance criteria: at least 80% of embryos developed to the blastocyst stage. 2. Limulus Amebocyte Lysate (LAL) test. Acceptance criteria: < 20 EU/device.

## Ordering Information

Item Code	Model Code	Description
1320088	MRI-CC	CultureCoin® for Time-Lapse of 14 embryos (25 pcs. per pack)





# Multiroom Incubators

## MIRI® Incubation System

### The Top-of-the-Line Features of the MIRI® Incubation System

- **Heated Lid**  
Prevents condensation. Enhances temperature regulation.
- **Direct Heat Transfer**  
Provides superior temperature stability.
- **Completely Independent Chambers**  
Any disruption (e.g., temperature drop after opening the lid) has zero impact on the rest of the system.
- **A Complete Incubation Environment**
  - Has a built-in gas mixer. Premixed gas is not required.
  - Built-in pH measuring system and data logging system.

# MIRI® Multiroom Incubator

The MIRI® is a revolution, in form and functionality, of benchtop incubators for In Vitro Fertilization (IVF). With 6 chambers, the MIRI® is a Multiroom Incubator that allows users to access their cultures in one chamber without affecting the neighbouring chambers. Thus, the harmful effects of fluctuations in temperature and gas caused by frequent incubator access are avoided. Built specifically to equip IVF laboratories and clinics to provide the best standard of care, it boasts a unique set of features that cannot be found elsewhere.

## Key Features

### Fast Recovery

- <1 minute temperature recovery.
  - <3 minutes gas recovery.
- \*If the lid has not been opened for more than 30 sec.

### Built-in pH meter

For accurate validation.

### Solid Validation System

- Six (6) PT1000 sensors and Gas ports for validation outputs
- External Data Logging.
- Alarm relay contact.

### Supreme Capacity

- Total capacity of up to 48 standard culture dishes.

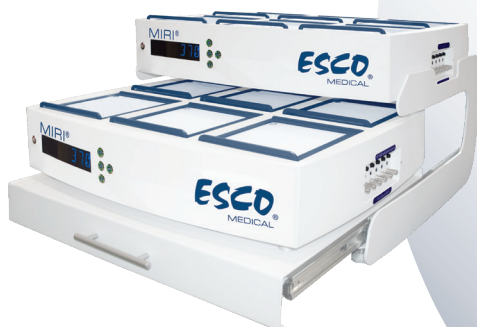
### Excellent Gas System

- Separate CO<sub>2</sub> and O<sub>2</sub> regulation, expensive mixed gases not required!
- Air is continuously cleaned by VOC/HEPA filters, and UV light. (not applicable to MIRI® Humidity)



*This equipment is a CE-marked device and is in conformity with the essential requirements of the medical devices EU regulation 2017/745.*

## Stacking Frames



**MRA-DRAW** - MIRI® Stacking Frame for 2 devices with a drawer



**MRA-1014** - MIRI® Stacking Frame for 2 devices

# General Specifications

## MIRI® Multiroom IVF Incubators

Model	MIRI®	MIRI® Humidity
Overall Dimensions (W x D x H)	700 x 585 x 165 mm (27.6 x 23.0 x 6.5")	700 x 645 x 280 mm ( 27.6 x 25.4 x 11.0")
Chamber Dimensions	200 x 176 x 25 mm (7.9 x 6.9 x 1")	
Power Supply	115/230V, 50/60 Hz	
Power Consumption	300 W	
* CO <sub>2</sub> Gas Consumption	<2L/h	<4L/h
**N <sub>2</sub> Gas Consumption	< 12 L/h	
CO <sub>2</sub> Control Range	2.0 - 9.9%	
O <sub>2</sub> Control Range	5.0 - 20%	
Input Gas Pressure (CO <sub>2</sub> )	0.4 – 0.6 bar (5.80 – 8.70 PSI)	
Input Gas Pressure (N <sub>2</sub> )	0.4 – 0.6 bar (5.80 – 8.70 PSI)	
Net Weight	40 kg (88.2 lbs)	
Shipping Weight	45 kg (99.2 lbs) (Including the pallet's weight)	
Shipping Dimension	824 x 724 x 489 mm (32.4 x 28.5 x 19.3") (device on the pallet)	

\* Under normal condition (CO<sub>2</sub> setpoint reached at 6.0%, all lids closed).

\*\* Under normal condition (O<sub>2</sub> setpoint reached at 5.0%, all lids closed).

Stacking Frame Model	Dimensions with Devices Affixed (W x D x H)
MIRI® Stacking Frame for 2 Devices	717 x 699,53 x 748 mm (28.2" x 27.5" x 29.4")
MIRI® Stacking Frame for 2 Devices with a drawer	717 x 762 x 460 mm (28.2" x 29.0" x 18.1")
	On full opening of the drawer: 717 x 1328 x 460 mm (28.2" x 52.3" x 18.1")

## Ordering Information

MIRI® Multiroom Incubator		
Item Code	Model Code	Description
Device		
2070047	MRI-6A10-8	MIRI® Multiroom Incubator, 230V, 50/60Hz
2070048	MRI-6A10-9	MIRI® Multiroom Incubator, 115V, 50/60Hz
2070183	MRI-6A10-H-8	MIRI® Humidity Multiroom Incubator, 230V, 50/60Hz
2070184	MRI-6A10-H-9	MIRI® Humidity Multiroom Incubator, 115V, 50/60Hz
Accessories		
1320011	MRA-1007	VOC/HEPA filter (recommended to be replaced every 3 months)
1320142	MRI-DATA	Datalogger Package with an Intel® NUC Box, monitor etc.
1320018	MRA-1014	MIRI® Stacking Frame for 2 devices
1320226	MRA-DRAW	MIRI® Stacking Frame with a drawer for 2 devices
1320045	MRI-GA	MIRI® GA CO <sub>2</sub> /O <sub>2</sub> & Temperature Validation Unit, 115V / 230V (only for MIRI® Multiroom Incubator)

# CelCulture® CO<sub>2</sub> Incubator

The CO<sub>2</sub> Incubator has a vital role in providing an optimal environment in embryo development during IVF and other ART procedures. Sleek, reliable and intuitive, the Esco CelCulture® CO<sub>2</sub> incubator is packed with outstanding features such as rapid parameter recovery, ISO Class 5 Cleanliness, ISOCIDE™ antimicrobial coating, optional Inner Door Kit that reduces contamination risk, and other accessories for specialized applications.



## CelCulture® CO<sub>2</sub> Incubators

CelCulture® is equipped with 90°C Moist Heat Decontamination System evaluated by HPA-UK. It utilizes ULPA filter to keep the chamber at ISO Class 5 cleanliness which ensures that all contaminants are filtered and clean air is recirculated.

### Key Features

- Wider temperature range, from (Ambient +5) temperature to 60°C.
- Complete contamination control methods to protect your precious samples.
- All gas inputs are filtered via 0.2µm in-line filter and ULPA filtration system.
- 90°C moist heat decontamination cycle, validated by HPA-UK.

### ISOCIDE™

*CelCulture® CO<sub>2</sub> Incubators are available in 3 sizes, 50 L, 170 L, and 240 L.*



### Roller Base

With casters wheels for mobility.



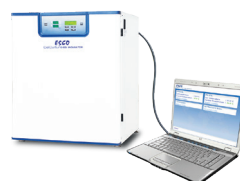
### Floor Stand with Casters

Support stand raises the incubator to a height of 700 mm (27.6") above the floor.



### Floor Stand with Adjustable Feet

Nominal range of 180 mm to 250 mm (7.1" to 9.8").



### Voyager Software Kit

PC-based software for remote monitoring, data logging and programming.

## Ordering Information

Item Code	Model Code	Description
<b>IR Sensor Model with Stainless Steel Chamber</b>		
2170257	CCL-050B-8-IVF	Celculture® Incubator, 50 L, IR sensor, CO <sub>2</sub> control, Moist Heat Decon, with Sealed Inner Door Kit for 50 L (2 Glass Doors with Latches), Factory Installed, 230 VAC, 50/60 Hz
2170272	CCL-170B-8-IVF	CelCulture® Incubator 170 L IR Sensor, CO <sub>2</sub> Control ULPA, Moist Heat Decon, with Sealed Inner Door Kit for 170 L (4 Glass Doors with Latches), Factory Installed, 230 VAC 50/60 Hz
2170278	CCL-240B-8-IVF	CelCulture® Incubator 240 L IR Sensor CO <sub>2</sub> Control, ULPA, Moist Heat Decon, with Sealed Inner Door Kit for 240 L (4/6 Glass Doors with Latches), Factory Installed, 230 VAC 50/60 Hz
2170258	CCL-050B-9-IVF	Celculture® Incubator, 50 L, IR sensor, CO <sub>2</sub> control, Moist Heat Decon, with Sealed Inner Door Kit for 50 L (2 Glass Doors with Latches), Factory Installed, 115 VAC, 50/60 Hz
2170273	CCL-170B-9-IVF	CelCulture® Incubator 170 L IR Sensor, CO <sub>2</sub> Control ULPA, Moist Heat Decon, with Sealed Inner Door Kit for 170 L (4 Glass Doors with Latches), Factory Installed, 115 VAC 50/60 Hz
2170279	CCL-240B-9-IVF	CelCulture® Incubator 240 L, IR Sensor, CO <sub>2</sub> Control, ULPA, Moist Heat Decon with Sealed Inner Door Kit for 240 L (4/6 Glass Doors with Latches), Factory Installed, 115 VAC 50/60Hz
<b>Suppressed O<sub>2</sub> Model with Stainless Steel Chamber</b>		
2170260	CCL-050T-8-IVF	Celculture® Incubator, 50 L, IR sensor, CO <sub>2</sub> & O <sub>2</sub> control, Moist Heat Decon, with Sealed Inner Door Kit for 50 L (2 Glass Doors with Latches), Factory Installed, 230 VAC, 50/60 Hz
2170275	CCL-170T-8-IVF	CelCulture® Incubator 170 L IR Sensor, CO <sub>2</sub> & O <sub>2</sub> Control ULPA, Moist Heat Decon, with Sealed Inner Door Kit for 170 L (4 Glass Doors with Latches), Factory Installed, 230 AC 50/60 Hz
2170281	CCL-240T-8-IVF	Celculture® Incubator, 240 L, IR sensor, CO <sub>2</sub> & O <sub>2</sub> control, Moist Heat Decon, with Sealed Inner Door Kit for 240 L (4/6 Glass Doors with Latches), Factory Installed, 230 VAC 50/60 Hz
2170261	CCL-050T-9-IVF	Celculture® Incubator, 50 L, IR sensor, CO <sub>2</sub> & O <sub>2</sub> control, Moist Heat Decon, with Sealed Inner Door Kit for 50 L (2 Glass Doors with Latches), Factory Installed, 115 VAC, 50/60 Hz
2170276	CCL-170T-9-IVF	CelCulture® Incubator 170 L IR Sensor, CO <sub>2</sub> & O <sub>2</sub> Control ULPA, Moist Heat Decon, with Sealed Inner Door Kit for 170 L (4 Glass Doors with Latches), Factory Installed, 115 VAC 50/60 Hz
2170282	CCL-240T-9-IVF	Celculture® Incubator, 240 L, IR sensor, CO <sub>2</sub> & O <sub>2</sub> control, Moist Heat Decon, with Sealed Inner Door Kit for 240 L (4/6 Glass Doors with Latches), Factory Installed, 115 VAC 50/60 Hz

# Multi-Zone ART Workstation

The Multi-Zone ART Workstation is the most advanced workstation in its class. It is designed for use in applications that require a high level of control over environmental conditions. Applications can range from animal embryo culture in research to human embryo manipulation done in fertility laboratories.

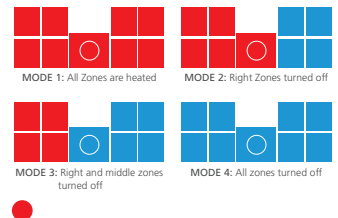
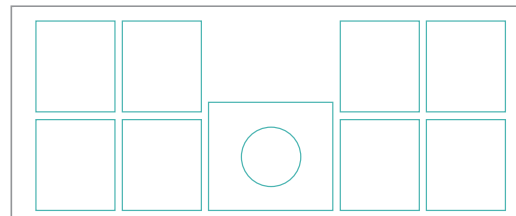
## Key Features



### Multi-Zone Heating System

1 setpoint, up to 12 independent zones per working area with their own heating elements and sensors allow excellent uniformity. The heating system will automatically prioritize power distribution to ensure effective temperature control with fast recovery. In models that feature MIRI® chambers, temperature regulation of the chambers will always be on regardless of mode.

- Accuracy:  $\pm 0.2\text{ }^{\circ}\text{C}$
- Uniformity:  $\pm 0.2\text{ }^{\circ}\text{C}$



\*The provided example of heating zone overlay is applicable for MAW-4D<sub>1</sub> model. For different heating zone layouts, please read pages 18 and 19. The heating modes are the same for all the models.



### Humidification System

The Multi-zone ART Workstation design does not allow active control of humidity levels in circulated gas. The humidification method used in the Multi-zone ART Workstation increases circulating gas' humidity, which will decrease evaporation risks in media of Petri dishes placed in the chambers. On models without MIRI® chambers semi-closed environment can be created with a plastic cover.



### Heated Glass Stage

The heated glass stage has its own independent heating zone further to enhance the temperature control and recovery in this zone.

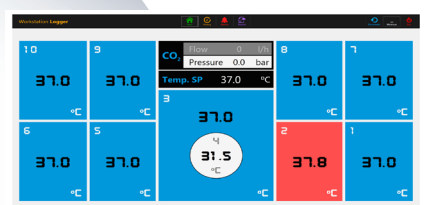
### Stainless-Steel Table-top

The main material used in the tabletop surface is stainless steel, which ensures its strength and rigidity.



### Microscope Integration Provision

The integrated stereoscope in the work chamber allows users to maintain culture dishes at steady temperature during observation and manipulation. Fewer movements will also reduce risk of accidents.



### Surveillance System\*\*

Provides the user with real-time information of zone performance and other work area parameters such as gas pressure and flow rate.

\*\*When any of the heating zones are OFF, the monitor shall not display real-time temperature as there are no controlled heating to give uniformity across the OFF zone.

# Multi-Zone Workstation with MIRI® Chambers



The workstation is now even better with its integrated MIRI® chambers to further secure your embryos while inside the workstation. The MIRI® incubator is popular for its top-notch features such as stable culture environment and faster parameter recovery.

## Multi-Zone Heating System

The independent zones have its own heating elements and sensors.

## MIRI® Chambers

Your specimens are more secured than ever with the integrated MIRI® chambers, known for its stable and precise temperature output.



## Support Stand Options

More options to choose from to meet your requirements.

## Fit in the same MIRI® heating optimization plates



Nunc™



Falcon®



Vitrolife



LifeGlobal®  
GPS Dishes



BIRR



SparMED Oosafe®

## Accessories



### Support Stand:

- With leveling feet
- With Caster Wheels
- Telescopic stand with Caster Wheels



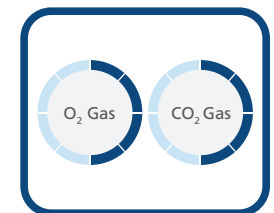
### UV Kit\*



### Carbon Filter



### 32mm Microscope pillar

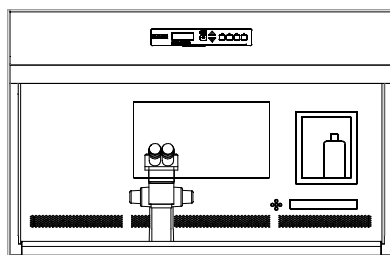


### Gas Mixer for MAW

\*Esco reserves the right to make periodic minor design changes without obligation to notify any person or entity of such change.

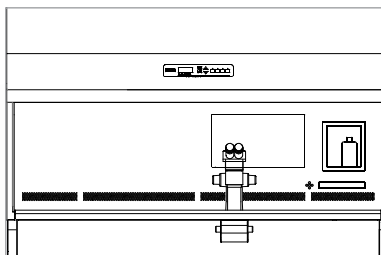
## Available in a variety of sizes and configurations to meet the needs of the laboratory

### MAW-4D\_ (Front View)



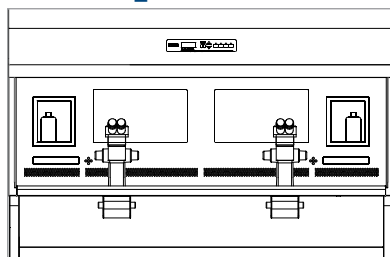
- Width: 4ft
- Microscope: Single
- Basic Configuration
- Accommodates 1 user
- Ideal for small Laboratories

### MAW-6D\_MONO (Front View)



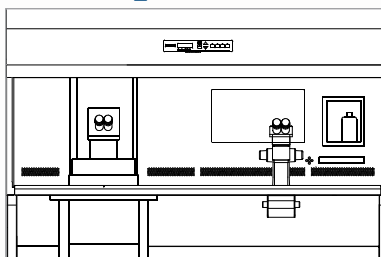
- Width: 6ft
- Microscope: Single
- Accommodates 1 user
- For users that require additional workspace

### MAW-6D\_-DUAL (Front View)



- Width: 6ft
- Microscope: Dual
- Accommodates 2 users
- For those who want to use all available area of the workspace

### MAW-6D\_-MP (Front View)



- Width: 6ft
- Microscope: Single 1 Stereomicroscope with the ability to integrate 1 inverted microscope.
- Multi-purpose- ideal for embryo inspection and micromanipulation.
- Accommodates 2 users

## General Specifications

Model	MAW-4D_	MAW-6D_-MONO	MAW-6D_-DUAL	MAW-6D_-MP
Nominal Size	1.2 meter (4")		1.8 meter (6")	
Internal Work area dimensions (W x D x H)*	1260 x 500 x 710 mm (49.6" x 19.7" x 28.0")	1870 x 500 x 710 mm (73.6" x 19.7" x 28.0")		1870 x 490 x 780 mm (73.6" x 19.3" x 30.7")
Laminar Air Velocity	Average of 0.21m/s or 41 fpm (± 20%)			
Filter Efficiency	>99.999% for particle size between 0.1 to 0.3 microns per IEST-RP-CC001.3 / H14 per EN 1822			
Pre-filter	Disposable and non-washable polyester fibers with 85% arrestance / EU3 rated			
Noise level (per NSF 49)**	47 dBA	52 dBA		
Set of (9+1) Heating Zones	1 set	1 set	2 sets	1 set
Surveillance System with data logger	1 set	1 set	2 sets	1 set
Humidification System***	1 set	1 set	2 sets	1 set
PT 1000 ports	5 ports	5 ports	10 ports	5 ports
Microscope	Required, Not included (see microscope ordering information)			
	Position for 1 stereo microscope		Position for 2 stereo microscopes	Position for 1 stereo microscope and 1 inverted microscope
Transmitted Light Source	1 set	1 set	2 sets	1 set
Shipping weight	250 kg	350 kg		

\* The actual MAW-6D\_-MP's work area dimension will be customized to fit the inverted microscope.

\*\* Noise reading in open field condition / anechoic chamber. Noise reading in normal room varies by room size, layout, and background noise, but may reach roughly 3-4 dBA above these values.

\*\*\*1 set of humidification system includes one (1) water bottle with tubing, one (1) sample carry tray and one (1) plastic cover.

## Ordering Information

Item Code	Model Code	Description
2070017	MAW-4D8	Esco Multi-Zone ART Workstation, 4ft (1.2m), 230V 50/60Hz
2070025	MAW-4D9	Esco Multi-Zone ART Workstation, 4ft (1.2m), 115V 50/60Hz
2070018	MAW-6D8-MONO	Esco Multi-Zone ART Workstation, 6ft (1.8m), 230V 50/60Hz
2070026	MAW-6D9-MONO	Esco Multi-Zone ART Workstation, 6ft (1.8m), 115V 50/60Hz
2070050	MAW-6D8-DUAL	Esco Multi-Zone ART Workstation, Double Heated Zone, 6ft (1.8m), 230V 50/60Hz
2070039	MAW-6D9-DUAL	Esco Multi-Zone ART Workstation, Double Heated Zone, 6ft (1.8m), 115V 50/60Hz
2070036	MAW-6D8-MP	Esco Multi-Zone ART Workstation, Multi-Purpose, 6ft (1.8m), 230V 50/60Hz
2070038	MAW-6D9-MP	Esco Multi-Zone ART Workstation, Multi-Purpose, 6ft (1.8m), 115V 50/60Hz

# VIVA® Animal Research Workstations



## VIVA® Universal Animal Containment Workstation

The Esco Universal Animal Workstation provides Biosafety Cabinet Class II performance to protect animals inside the enclosure from exposure to airborne particulates/ambient contamination, as well as, the operator from exposure to allergens and other potentially hazardous materials.

Esco's line of animal workstations are all ELISA-verified allergen containments that guarantee more safety for the user.

### Key Features

- Sentinel™ Gold Microprocessor Control System.
- Ergonomic, ADA-compliant.
- Sloped Front Angle.
- Available Sizes: 4 and 6 ft.

## General Specifications

Model	VA2-4A_-E		VA2-6A_-E	
Nominal Size	1.2 meter (4')		1.8 meter (6')	
External Dimensions (W x D x H)	1423 x 815 x 1510 mm (56" x 32.1" x 59.4")		2030 x 815 x 1510 mm (79.9" x 32.1" x 59.4")	
Maximum External Dimensions with Support Stand (W x D x H)	1585 x 852 x 2235 mm (62.4" x 33.5" x 88.0")		2193 x 852 x 2235 mm (86.3" x 33.5" x 88.0")	
Internal Work Area (W x D x H)	1270 x 623 x 680 mm (50.0" x 24.5" x 26.7")		1870 x 620 x 680 mm (73.6" x 24.4" x 26.7")	
Average Airflow Velocity	Inflow	0.45 m/s (90 fpm)		
	Downflow	0.35 m/s (70 fpm)		
Airflow Volume	Inflow	625 m <sup>3</sup> / h (368 cfm)	921 m <sup>3</sup> / h (542 cfm)	
	Downflow, 60%	959 m <sup>3</sup> / h (547 cfm)	1414 m <sup>3</sup> / h (832 cfm)	
	Exhaust, 40%	625 m <sup>3</sup> / h (368 cfm)	921 m <sup>3</sup> / h (542 cfm)	
ULPA Filter Typical Efficiency	>99.999% for particle size between 0.1 to 0.3 microns per IEST-RP-CC001.3			
Sound Emission*	NSF / ANSI 49	63 dBA	64 dBA	
	EN 12469	60 dBA	61 dBA	
Fluorescent Lamp Intensity	> 1400 lux (> 130 foot candles)		> 1230 lux (> 114 foot candles)	
Cabinet Construction	1.5 mm (16 gauge) electrogalvanized steel with Isocide white oven-baked epoxy power coating			
Net Weight Cabinet including stand	406 Kg (895 lbs)		528 Kg (1164 lbs)	
Shipping Weight Cabinet including stand	456 Kg (1005 lbs)		570 Kg (1257 lbs)	
Shipping Dimensions, Maximum (W x D x H) Cabinet excluding stand	1550 x 950 x 1900 mm (61.0" x 37.4" x 74.8")		2150 x 950 x 1900 mm (84.6" x 37.4" x 74.8")	
Shipping Volume, excluding stand	2.80 m <sup>3</sup> (99 cu.ft.)		3.88 m <sup>3</sup> (137 cu.ft.)	
Electrical*	Model	Voltage	Model	Voltage
	VA2-4A1-E	220-240 VAC, 50/60 Hz, 1Ph, 5.5 amps	VA2-6A1-E	220-240V, AC, 50/60 Hz, 1Ph, 6 amps
	VA2-4A2-E	110-120 VAC, 50/60 Hz, 1Ph, 11 amps	VA2-6A2-E	110-120V, AC, 50/60 Hz, 1Ph, 12 amps

\*Note to customer: Insert electrical voltage number into last model number digit when ordering  
Contact Esco or your local Sales Representative for ordering information.



## VIVA® Dual Access Animal Containment Workstation

Esco's line of animal workstations are all ELISA-verified allergen containments that guarantee more safety for the user.

### Key Features

- Sentinel™ Gold Microprocessor Control System.
- Ergonomic, ADA-compliant.
- Advanced Work Tray Design.
- Available Sizes: 4 and 5 ft.

## General Specifications

Model		VDA-4A_	VDA-5A_
Nominal Size		1.2 meter (4')	1.5 meter (5')
External Dimensions (W x D x H)	Minimum Height	1340 x 762 x 1961 mm (52.8" x 30.0" x 77.2") min height	1645 x 762 x 1961 mm (64.7" x 30.0" x 77.2") min height
	Maximum Height	1340 x 762 x 2245 mm (52.8" x 30.0" x 88.4") max height	1645 x 762 x 2245 mm (64.7" x 30.0" x 88.4") max height
Internal Work Area (W x D x H)		1100 x 465 x 564 mm (43.3" x 18.3" x 22.2")	1405 x 465 x 564 mm (55.3" x 18.3" x 22.2")
Downflow Velocity		0.24 m/s (47 fpm)	
Pre-Filter		Disposable and non-washable polyester fibres with 85% arrestence / EU3 rated	
ULPA Filter Typical Efficiency		>99.999% for particle size between 0.1 to 0.3 microns, per IEST-RP-CC001.3	
Sound Emission per EN 12469*		53 dBA	54 dBA
Fluorescent Lamp Intensity at Zero Ambient		1725 lux (160 foot candles)	1525 lux (142 foot candles)
Construction, Main Body		1.5 mm (0.06") 16 gauge EG Steel with Isocide™ Oven-Baked Epoxy-Polyester Powder Coated Finish	
Shipping Dimensions, Maximum (W x D x H)		1720 x 820 x 2240 mm (67.7" x 32.2" x 88.1")	2025 x 820 x 2240 mm (79.7" x 32.2" x 88.1")
Shipping Weight		342 Kg (754 lbs)	432 Kg (952 lbs)
Shipping Volume, Maximum		3.16 m <sup>3</sup> (111.6 cu.ft.)	3.72 m <sup>3</sup> (131.4 cu.ft.)
Electrical Rating	VDA-_A8	220-240 VAC, 50/60 Hz, 1Ø	
	VDA-_A9	110-130 VAC, 50/60 Hz, 1Ø	
Power Consumption	VDA-_A8	190 W	230 W
	VDA-_A9	210 W	250 W
Accessories	Foldable Side Tray (SS Shelf Kit)	VDA-001 5170257	
	Side Shield	VDA-004 5170562	VDA-005 5170563
	Feed Hopper	VDA-006 5170594	

\*Noise as measured in open field or anechoic chamber.

Contact Esco or your local Sales Representative for ordering information.





## VIVA® Dual Access Animal Containment Workstation

Esco's line of animal workstations are all ELISA-verified allergen containments that guarantee more safety for the user.

### Key Features

- Sentinel™ Gold Microprocessor Control System.
- Ergonomic, ADA-compliant.
- Advanced Work Tray Design.
- Available Sizes: 4 and 5 ft.

## General Specifications

<b>Model</b>		<b>VBD-4A_</b>		
<b>Nominal Size</b>		1.2 meter (4')		
<b>External Dimensions (W x D x H)</b>		1247 x 760 x 1966 mm (49.1" x 30.0" x 77.4") minimum height 1247 x 760 x 2271 mm (49.1" x 30.0" x 89.4") maximum height		
<b>Internal Work Area (W x D x H)</b>		1040 x 680 x 594 mm (40.9" x 26.8" x 23.4")		
<b>Work Surface Height</b>		920 mm – 1225 mm (36.2" – 48.2")		
<b>Front Opening</b>		400 mm (15.7")		
<b>Inflow Velocity</b>		0.35 m/s (70 fpm) at initial setpoint		
<b>Pre-Filter</b>		Disposable, non-washable polyester fiber, 85% arrestance, EU3 rated		
<b>ULPA Filter Typical Efficiency</b>		>99.999% at 0.1 to 0.3 microns as per IEST-RP-CC001.3 USA		
<b>Sound Emission* Per EN 12469</b>		58 dBA		
<b>Fluorescent Lamps</b>		> 1,300 lux (> 121 foot candles)		
<b>Workstation Construction</b>	<b>Main Body</b>	1.2 mm (0.05") 18 gauge electro-galvanized steel with Isocide™ white oven-baked epoxy-polyester powder-coating		
	<b>Work Top</b>	1.2 mm (0.05") 18 gauge stainless steel, type 304, with 4B finish		
	<b>Inner Liner</b>	0.9 mm (0.035") 20 gauge stainless steel, type 304, with 4B finish		
<b>Net Weight</b>		233 Kg (514 lbs)		
<b>Shipping Weight</b>		294 Kg (648 lbs)		
<b>Shipping Dimensions, Maximum (W x D x H)</b>		2150 x 1840 x 1230 mm (84.6" x 72.4" x 48.4")		
<b>Shipping Volume, Maximum</b>		4.87 m <sup>3</sup> (172 cu.ft.)		
<b>Electrical**</b>	<b>Model</b>	<b>VBD-4A1</b>	<b>VBD-4A2</b>	<b>VBD-4A3</b>
	<b>Voltages</b>	220-240 VAC, 50 Hz, 1Φ	110-120 VAC, 60 Hz, 1Φ	220-240 VAC, 60 Hz, 1Φ

\*Noise as measured in open field or anechoic chamber.

Contact Esco or your local Sales Representative for ordering information.

# MIRI<sup>®</sup> Laminar Flow Cabinet

The MIRI<sup>®</sup> Laminar Flow Cabinet has been designed with the capability to maintain a controlled work surface for laboratory applications requiring a clean and sterile workspace, which is achieved through the use of vertical laminar airflow pattern. Clean filtered air travels from the top of the cabinet downwards onto the working surface.

Laminar flow cabinets are ideal to be used for our customers who requires a clean and sterile workspace to provide good protection towards the sample.

## Key Features

- ULPA Filter (ISO Class 3 Work Zone)
- ISOCIDE™ Antimicrobial Powder Coating
- Built-in Monitor (optional)
- Integrated Microscope Pole (optional)
- Outstanding Sample Protection
- Energy Efficient
- Available Sizes: 3, 4, 5 and 6 ft



ISOCIDE™



## General Specifications

Model	MLF-3D_	MLF-4D_	MLF-5D_	MLF-6D_
<b>Work Area Dimension (W x D x H)</b>	965 x 635 x 710 mm (39.0" x 25.0" x 28.0")	1250 x 635 x 710 mm (49.2" x 25.0" x 28.0")	1570 x 635 x 710 mm (61.8" x 25.0" x 28.0")	1875 x 635 x 710 mm (73.8" x 25.0" x 28.0")
<b>External Dimensions without Support Stand (W x D x H)</b>	1035 x 760 x 1270 mm (40.7" x 29.9" x 50.0")	1340 x 760 x 1270 mm (52.8" x 29.9" x 50.0")	1640 x 760 x 1270 mm (64.6" x 29.9" x 50.0")	1965 x 760 x 1270 mm (77.4" x 29.9" x 50.0")
<b>External Dimension with "STL" Type Support Stand (W x D x H)</b>	1035 x 760 x 1980 mm (40.7" x 29.9" x 78.0")	1340 x 760 x 1980 mm (52.8" x 29.9" x 78.0")	1640 x 760 x 1980 mm (64.6" x 29.9" x 78.0")	1965 x 760 x 1980 mm (77.4" x 29.9" x 78.0")
<b>Cabinet Construction</b>	<b>Main Body</b>	1.2 mm (0.05") 18-gauge electro-galvanized steel with white oven baked epoxy-polyester powder coated finish		
	<b>Work Zone</b>	1.2 mm (0.05") 18-gauge stainless steel, grade 304, with 4B finish		
	<b>Side Walls</b>	UV-absorbing tempered glass 5mm (0.2"), colourless and transparent		
	<b>Sash</b>			
<b>Power Supply</b>	<b>MLF_D8</b>	220-240V, 50/60Hz		
	<b>MLF_D9</b>	110-130V, 50/60Hz		
<b>Motor Type</b>	ECM Motor			
<b>Pre-Filter</b>	Disposable and non-washable 100% polyester fiber with 85% arrestance, EU-3 rated			
<b>Filter Efficiency</b>	HEPA/ULPA filtration with 99.9995% efficiency			
<b>ISO Classification</b>	ISO Class 3			
<b>Noise Level Reading*</b>	≤48 dB(A)*			
<b>Control System</b>	Esco Sentinel™ Gold Microprocessor Controller			
<b>Microscope Pole Provision</b>	Position for 1 microscope			
<b>Transmitted Light Source</b>	1 set			
<b>Advanced Option</b>	Touchscreen Monitor**			

\*Noise reading in open field condition/ anechoic chamber. Noise reading in normal room varies by room size, layout, and background noise, but may reach roughly 3-4 dBA above these values.

\*\* Monitoring screen system comes as accessory, you are required to specify in your quotation

Contact Esco or your local Sales Representative for ordering information.

# Versati™ Tabletop Centrifuge



Versati™ Tabletop centrifuge stands out among the same-level products with its versatility, running features, and easy handling. It can be used with high-capacity and low-to-high-speed general-purpose centrifuge applications. It is suitable for the sperm purification process during animal IVF because of its adjustable temperature range (-20°C to +40°C).

## Key Features

- Compact Design.
- Incredible Flexibility.
- Overspeed Protection.
- Fast Pre-cooling
- Overspeed Protection
- Over Temperature Protection

## Overview of Models

### Versati™ Micro Centrifuge



#### Model: MCV-88

- Maintenance-free brushless motor
- Superior safety
- Audible and visible alarms
- Up to 88ml capacity



#### Model: MCR-88

- Maintenance-free brushless motor
- Superior safety
- Temperature Range: -20°C to 40°C
- Up to 88ml capacity

### Versati™ Tabletop Centrifuge



#### Model: TCV1500

- Maintenance-free brushless motor
- Superior safety (Automatic rotor recognition)
- Audible and visible alarms
- Up to 1500ml capacity



#### Model: TCR-1500

- Maintenance-free brushless motor
- Superior safety (Automatic rotor recognition)
- Temperature Range: -20°C to 40°C
- Up to 1500ml capacity

# Options and Accessories

## General Accessories for Versati™ Micro Centrifuge



### Aerosol-tight Fixed-angle Rotor

This TÜV Nord Certified Bioseal Rotor is used for 1.5/2.0 ml tubes. Adapters are used to run 0.5 ml and 2.0 ml / 0.4 ml PCR tubes.



### Fixed-angle Rotor

Aluminum rotor used for 5 ml conical tubes. Adapters are also used in this rotor to run 1-1.8 ml Cryo tubes and 1.5 ml / 2.0 ml PCR tubes.



### Microhematocrit Rotor

Rotor ideal for medical field in the determination of hematocrit value through its circular reader accessory. This rotor can only be used in MCV model.



### Fixed-angle Rotor for PCR Strips

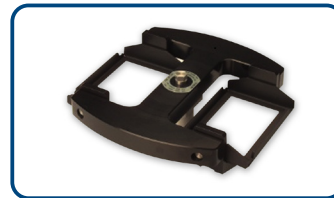
Rotor made of polypropylene used for 4 x 8 (0.2ml) PCR strips.

## General Accessories for Versati™ Tabletop Centrifuge



### Swing-bucket Rotor

Aluminum swing-bucket rotor with circular flat-bottom buckets made of polypropylene can hold up to 4 x 250 ml tubes. It has flexible adapters ideal for medical and biotechnology laboratories.



### Microtiter Plate Rotor

This microtiter plate rotor has a maximum capacity of up to 6 plates. This can also accommodate deep well plate, culture plate, microtest/ terasaki plate, microsonic system, and PCR well plate.



### Fixed-angle Rotor

The maximum capacity of this fixed-angle rotor is 6 x 250 ml. It can also run tubes ranging from 1.5/2.0 ml to 50 ml using suitable adapters.



### Aerosol-tight Fixed-angle Rotor

This TÜV Nord Certified Bioseal Rotor used for 1.5/2.0 ml tubes is also available in tabletop centrifuge models. Adapters are used to run 0.5 ml and 2.0 ml / 0.4 ml PCR tubes.

## Ordering Information

Item Code	Model Code	Description
2220005	TVC-1500-8	Tabletop Centrifuge Ventilated 230 VAC, 50/60 Hz
2220006	TCV-1500-9	Tabletop Centrifuge Ventilated 120 VAC, 50/60 Hz

## Guide to Models

### MCV - 88 - 8

Model	Code	Centrifuge Capacity	Code	Electrical Supply	Code
Micro Centrifuge Ventilated	MCV	Maximum Sample Capacity (ml)	88	230 VAC 50/60 Hz	8
				120 VAC 50/60 Hz	9
Micro Centrifuge Refrigerated	MCR			230 VAC 50/60 Hz	8
				120 VAC 50/60 Hz	9

## MCV / MCR High Speed Micro Centrifuge for up to 15,000 rpm

Designed to accelerate your routine sample preparation processes.

Item Code	Model Code	Description
2220001	MCV - 88 - 8	Micro Centrifuge Ventilated 230 VAC, 50/60 Hz
2220002	MCV - 88 - 9	Micro Centrifuge Ventilated 120 VAC, 50/60 Hz
2220003	MCR - 88 - 8	Micro Centrifuge Refrigerated 230 VAC, 50/60 Hz
2220004	MCR - 88 - 9	Micro Centrifuge Refrigerated 120 VAC, 50/60 Hz

## Guide to Models

### TCV - 1500 - 8

Model	Code	Centrifuge Capacity	Code	Electrical Supply	Code
Tabletop Centrifuge Ventilated	TCV	Maximum Sample Capacity (ml)	1500	230 VAC 50/60 Hz	8
				120 VAC 50/60 Hz	9
Tabletop Centrifuge Refrigerated	TCR			230 VAC 50/60 Hz	8
				120 VAC 50/60 Hz	9

## MCV / MCR High Speed Micro Centrifuge for up to 15,000 rpm

Designed to accelerate your routine sample preparation processes.

Item Code	Model Code	Description
2220005	TCV - 1500 - 8	Tabletop Centrifuge Ventilated 230 VAC, 50/60 Hz
2220006	TCV - 1500 - 9	Tabletop Centrifuge Ventilated 120 VAC, 50/60 Hz
2220007	TCR - 1500 - 8	Tabletop Centrifuge Refrigerated 230 VAC, 50/60 Hz
2220008	TCR - 1500 - 9	Tabletop Centrifuge Refrigerated 120 VAC, 50/60 Hz

Contact Esco or your local Sales Representative for ordering information.

# Aeris™ Conventional PCR Thermal Cycler



The Aeris™ thermal cyclers can be used for conventional PCR applications. The cycler offers the flexibility to change the thermal blocks depending on the application: from consumable PCR tubes, strips, plates, and slides. System includes excellent heating and cooling rate with accurate and uniform temperature throughout the samples.

## Key Features

- Multi-block capability
- Adjustable hot lid temperature and ramp rate
- Excellent temperature accuracy and uniformity
- Can perform standalone operation
- Software allows variety of PCR conditions, can control up to 30 units via one PC
- Password protection for secure system access

## OPTION: Choose the appropriate block for your PCR application with Five Interchangeable Blocks



### AERIS-BG096 G-96 WELL

Applicable consumables:  
0.2ml tubes, 96-well microplate,  
12 x 8 strips, 8 x 12 strips



### AERIS-BD048 D-48 x 0.2ml

Two in one! Two independent experiments may be carried out at the same time.

Applicable consumables:  
0.2ml tubes, 6 x 8 strips



### AERIS-B4830 48 x 0.2ml + 30 x 0.5ml WELL

Applicable consumables:  
0.2ml tubes, 0.5ml tubes,  
12 x 8 strips, 8 x 12 strips



### AERIS-B4076 4 IN SITU SLIDES

For *In Situ* PCR  
Applicable consumables:  
4 slides *in situ*



### AERIS-BG384 G-384 WELL

Applicable consumables:  
384-well microplate

## Ordering Information

Item Code	Model Code	Description
2210003	AERIS-MB	Aeris™ Thermal Cycler Main Body (100-240 VAC)
2210004	AERIS-BG096	Aeris™ Thermal Cycler Block (96 x 0.2 ml)
2210005	AERIS-B4830	Aeris™ Thermal Cycler Combined Block (48 x 0.2 ml + 30 x 0.5 ml)
2210006	AERIS-BG384	Aeris™ Thermal Cycler Block (384 wells)
2210007	AERIS-BD048	Aeris™ Thermal Cycler Dual Block (48 x 0.2 ml)
2210008	AERIS-B4076	Aeris™ Thermal Cycler (4 slides in situ)

Contact Esco or your local Sales Representative for ordering information.

# General Specifications

Model Code	AERIS-BG096	AERIS-B4830	AERIS-BG384	AERIS-BD048	AERIS-B4076
Sample Capacity	96 x 0.2 ml	48 x 0.2 ml + 30 x 0.5ml	384 wells	48 x 0.2 ml + 48 x 0.2 ml	4 slides in situ
Application Consumables	0.2 ml tubes 96-well microplates 12 x 8 strips 8 x 12 strips	0.2 ml tubes 0.5 ml tubes 4 x 12 strips	384-well microplates	0.2 ml tubes 6 x 8 strips	4 slides in situ
Maximum Heating Rate	4.0°C/sec	2.8°C/sec	2.8°C/sec	4.0°C/sec	1.8°C/sec
Maximum Cooling Rate	4.0°C/sec	2.8°C/sec	2.8°C/sec	4.0°C/sec	1.8°C/sec
Gradient Capability	Yes	-	Yes	-	-
Gradient Rate	30-105°C	-	30-105°C	-	-
Max. Gradient	1-30°C	-	1-30°C	-	-
Temperature Control Mode	Tube or Block				
Temperature Range	4-105°C				
Over-temperature Cut-Out	Yes				
Number of Programs	Up to 250 programs, unlimited with USB flash drive				
Maximum Hold Time	59 min and 58 sec				
Temperature Accuracy	±0.1°C below 50°C				
Temperature Uniformity	±0.2°C below 55°C				
Hot Lid Temperature Range	30-110°C (Adjustable, Default 105°C, Automatic Hot-Lid)				
PCR Sample Volume	10-100 µl				
Tm Calculator	Auto				
Extensive Experiment Application	Option setting for time up/down is between 0-9 min 59 sec, which is suitable for Long PCR Temperature when up/down is between 0.1°C to 9.9°C, it is suitable for Touchdown PCR				
Auto Re-start on Power Failure	Yes				
Connection to PC Control	Yes				
Software	AerisLine™				
Operation System	Windows XP / Windows Vista / Windows 7 / Windows 8				
Pre-Run Sample Cooling	Yes, 4°C				
Language	English, Chinese, Spanish				
USB	Yes				
Display	6.5" Color LCD Touch Screen				
Dimensions (W x D x H)	306 x 386 x 295 mm (12.0" x 15.2" x 11.6")				
Power Supply, Consumption	100-240 VAC, 50/60 Hz, 600 W				
Warranty	3 years for mainbody, 2 years for blocks				
Net Weight	9 Kg (19.8 lbs) (without block)				
Shipping Weight	10 Kg (22.0 lbs)				
Shipping Dimension (W x D x H)	420 x 540 x 370 mm (16.5" x 21.3" x 14.6")				

# MIRI<sup>®</sup> Anti-Vibration Table



The MIRI<sup>®</sup> AVT (Anti-Vibration Table) features an anti-vibration mechanism for passive dampening of the microscope. This is mainly used for micromanipulation procedures like Intra-Cytoplasmic Sperm Injection (ICSI) procedures. Exclusively designed in Denmark and made in E.U., the stainless steel table and sturdy frame add mass to the anti-vibration table. MIRI<sup>®</sup> AVT is constructed to be easy-to-use and almost maintenance-free.

## Key Features

- Anti-vibration mechanism for passive dampening.
- Sturdy frame.
- Stainless-steel table-top.
- MIRI<sup>®</sup> AVT is able to eliminate vibrations in the range of 5.5-50 Hz.

## General Specifications

Technical Specifications	MIRI <sup>®</sup> AVT
Overall Dimensions (W x D x H)	1200 x 800 x 785 mm (47.2 x 31.5 x 31")
Net weight	117 kg (258 lbs)
Material	Powder-painted mild steel/Stainless steel
Float Size (W x D)	540 x 340 mm (21.3 x 13.4")
Recommended load weight	15 – 75 kg
Damping coefficient (6 Hz)	~ 0.1
Amplitude (6 Hz)	< 1 µm
Vibration Criteria	VC-C*
Frequency Range of Isolation	1 Hz – 100 Hz
Vertical Natural Frequency	1.5 Hz – 3 Hz
Horizontal Natural Frequency	1 Hz – 2 Hz
Damping Ratio	0.1 – 0.3

\*VC-C: More sensitive equipment (12.5 µm/s). A good standard for lithography and inspection equipment down to 1 micron detail size.

## Ordering Information

Item Code	Model Code	Description
1320484	MIRI <sup>®</sup> AVT	Anti-Vibration Table MIRI <sup>®</sup> AVT



# MIRI<sup>®</sup> GA Gas and Temperature Validation Unit



MIRI<sup>®</sup> GA is a tabletop device intended to make external incubator validation easier and safer. It is capable of monitoring the temperature (PT1000 connector) & gas concentration, flow and pressure. It can validate up to 6 chambers simultaneously 24 hours a day. It also has an adjustable flow rate which gives it the ability to properly sample small volume incubation chambers. Moreover, MIRI<sup>®</sup> GA comes with a full Data Logger software which is helpful in monitoring each parameter. The MIRI<sup>®</sup> GA can connect to any brand of incubator and is a perfect accessory to MIRI<sup>®</sup> TL, MIRI<sup>®</sup> Multiroom Incubator, and Mini MIRI<sup>®</sup> Dry Incubators.

## Key Features

- Constantly validate up to 6 x CO<sub>2</sub> / O<sub>2</sub> incubators.
- CO<sub>2</sub> / O<sub>2</sub> incubators controllable flow rate Monitor up to 6 x PT1000 sensors
- 6 ports for sequential gas samples.
- Gas feedback returns sampled gas to incubator or exhaust.

## General Specifications

<b>Input ports</b>	6 x PT1000 ports for temperature monitoring 6 x gas sampling ports
<b>Output ports</b>	1 x gas feedback port, 1 x USB port
<b>Shipping dimensions and weight</b>	460 x 450 x 250 mm (18.1" x 17.7" x 9.8"), 10 kg (22 lbs)

## Ordering Information\*

Item Code	Model Code	Description
1320045	MRI-GA	MIRI <sup>®</sup> GA CO <sub>2</sub> / O <sub>2</sub> & Temp validation Unit, 115/230V, 50/60Hz






\*Includes data logger software, 1pc PT1000 cable, 1pc Gas connection tube, 1pc Gas feedback tube

## Accessories

Item Code	Model Code	Description
1320063	MRA-1101	1pc PT1000 cable
1320064	MRA-1102	Set of 6pcs PT1000 cables
1320065	MRA-1103	1pc Gas connection tube
1320066	MRA-1104	Set of 6pcs Gas connection tubes

# ESCO LIFESCIENCES GROUP



-  Global Offices
-  Distributors
-  Factories
-  R&D Centers
-  Regional Distribution Centers

## Esco Medical Products:

MIRI® Multiroom Incubator  
 MIRI® Humidity Multiroom Incubator  
 MIRI® II-12 Multiroom Incubator  
 Mini MIRI® Dry Multiroom Incubator  
 Mini MIRI® Humidity Multiroom Incubator

MIRI® TL6 Time-Lapse Incubator  
 MIRI® TL12 Time-Lapse Incubator  
 Multi-Zone ART Workstation  
 MIRI® Laminar Flow Cabinet  
 MIRI® Evidence RFID Witnessing & Traceability System

CelCulture® CO<sub>2</sub> Incubator  
 MIRI® GA (Gas and Temperature Validation Unit)  
 MIRI® AVT  
 CultureCoin®

*Infertility is a problem that has a significant social, psychological, and economic impact on afflicted individuals and couples. It is a global concern that knows no race or creed. It has been estimated that 1 in 6 couples struggle with infertility at least once in their lifetime.*

*Esco Medical is one of the divisions of the Esco Lifesciences Group. We provide innovative technological solutions for fertility clinics and laboratories. We aim to become the leading manufacturer of high-quality equipment such as long-term embryo incubators, ART workstations, anti-vibration tables, and time-lapse incubators.*

*Our products are designed with the Silent Embryo Hypothesis as a guiding principle. The Silent Embryo Hypothesis states that the less disturbed an embryo can remain, the better its developmental potential will be. Most of our products are designed in Denmark and made in the EU. Our primary focus is to increase pregnancy success rates and patient satisfaction.*



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