



*VIP treatment for high success rate embryos in IVF*

# MIRI®

Multiroom Incubator for IVF

## Get superior stability with the MIRI® Multiroom Incubator.

Make the most of its integrated  
tri-gas system and six independent chambers.



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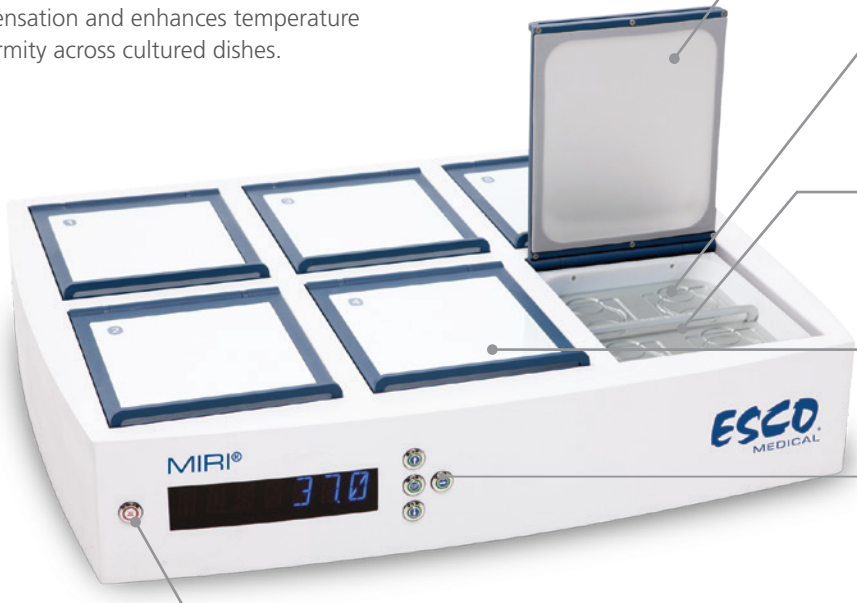


# MIRI®

“An advanced temperature regulation system for routine/long-term embryo incubation at your fingertips”

The MIRI® has six (6) chambers which are completely independent of each other. This is ideal because any disruption (e.g. temperature drop after opening the lid) has zero impact on the rest of the system. Furthermore, calibration is so much simpler because there is no crossover of heat from adjacent chambers.

Temperature regulation is thus completely independent per chamber. The MIRI® features a total of twelve (12) temperature controlled points. That is two (2) points for every chamber: one on the bottom and another on the heated lid. The heated lid is another great feature of the MIRI® as it prevents condensation and enhances temperature uniformity across cultured dishes.



*“Hand-in-hand with the best in incubation.”*

## FEATURES:

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### Heated Lid

- Prevents condensation
- Enhances temperature regulation and recovery
- Excellent uniformity between the top and the bottom
  - Temperature accuracy:  $\pm 0.2$  °C
  - Temperature uniformity:  $\pm 0.2$  °C

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### Heated bottom

- Provides direct heat transfer to the cultures through the optimization plate for stable heat regulation.
- Removable Heating Optimization Plate with wide selection of inserts.
  - Temperature accuracy:  $\pm 0.2$  °C
  - Temperature uniformity:  $\pm 0.2$  °C

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### Optional SAFE Sens Integration

For continuous pH monitoring. *See page 9 for more info.*

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### Six (6) Chambers

Completely individual chambers for easier calibration, faster recovery, less disruption, and prevents cross-contamination.

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### Control Panel Buttons and LED Display

Has large LED display that can be easily seen from a distance. The simple 4-button control panel allows for easy and intuitive operation.

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### Mute Button

Temporarily mutes alarm messages and sound for five (5) minutes



# Maximize embryo growth potential by providing VIP treatment



Oxygen range: 5-20%  
 Carbon dioxide range: 2.0 – 9.9%  
 Temperature range: 24.9 to 40.0 °C  
 Gas recovery: less than 3 minutes  
 Temperature recovery: less than 1 minute

**Common Stressors:**

- Temperature fluctuations
- Gas concentration fluctuations
- Non-optimal pH
- Volatile Organic Compounds (VOCs)

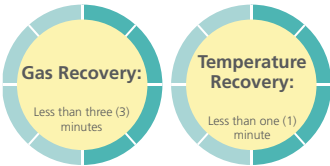
## Elevated O<sub>2</sub> concentration isn't always a good thing

While oxygen (O<sub>2</sub>) is necessary for normal aerobic metabolism, it is a double-edged sword as it can harm the developing embryo through oxidative damage. Recent studies highlight the benefit of having suppressed oxygen levels when incubating human embryos reflecting the natural low oxygen conditions in the womb.

## Shhh... Do not disturb

The MIRI® has an overall design that provides cultured embryos a minimum-stress environment. The independent chamber system prevents cross-contamination while HEPA/VOC filtration cleans the airstream. The small chamber volumes and direct heat regulation further translate to faster temperature and gas recovery.

## Fast Recovery



There are many advantages to using benchtop multiroom incubators. One important benefit is the speed of recovering temperature and gas parameters after opening a chamber.

## The little details count



IVF practitioners deal with precious, fragile and sensitive embryos, and often, the little details make a big difference. The MIRI® has a large LED display that can be easily seen from a distance. Also, the glass lid tops, can be written on — a very useful feature for organization.

## Stress-free validation of chamber parameters



PT1000 temperature sensors are built-in, which are completely independent from the main circuitry. Gas sampling ports are likewise available for all 6 chambers.



The MIRI® can be connected to an external device such as the Esco MIRI® GA for gas and temperature validation.

\* Input of pure gases is recommended

# MIRI<sup>®</sup> now comes in two variants to cater to all embryologists` culture needs



## MIRI<sup>®</sup> Multiroom Incubator

### High quality airstream via HEPA/VOC filter + UV

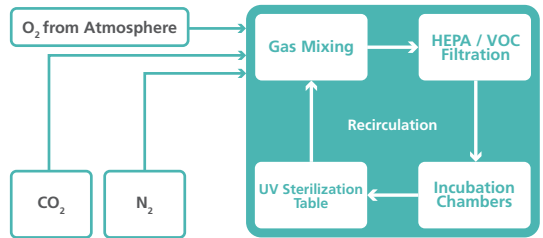
The filter module can be easily replaced once used.

The gas in the MIRI<sup>®</sup> is continuously recirculated through a HEPA/VOC filter. A UV-C light (254 nm) sterilizes the airstream before passing through the filter.



To learn more about the MIRI<sup>®</sup> Multiroom Incubator, scan this QR code.

### Airflow Diagram



## MIRI<sup>®</sup> Humidity Multiroom Incubator

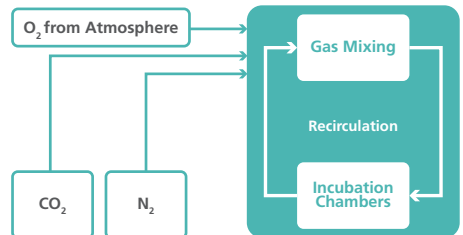
It has built-in humidity sensor for accurate and continuous readings.

The water bottle is located on the side of the unit for refilling and easy control of water level.



To learn more about the MIRI<sup>®</sup> Humidity, scan this QR code.

### Airflow Diagram



# Full-featured and user-friendly

## Control panel, display, and data logging software



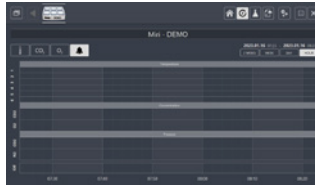
Complete parameters are displayed. Histories of any alarm events are logged.



The data logger stores continuous performance data of the machine throughout its use. These can be viewed in graphs.



The user can plug any standard BNC pH probe into the unit and measure the pH in the samples at will.



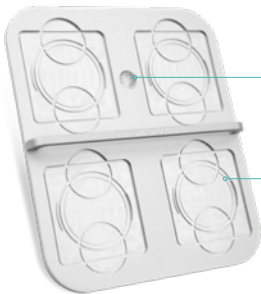
Conditions that put the MIRI® into alarm state are recorded. It is possible for the software to send email alerts as well.

The MIRI® can be connected to an easy-to-use, feature-packed data logging software installed on any PC and connected via USB.

Multiple machines can be connected and managed from a single computer. All real-time parameters of the machine can be conveniently viewed. These include the temperature of all monitored temperature and gas concentration points, gas input pressures, gas flow rates, current gas readings, and all set points.

All performance data of the machine including alarms are continuously logged and can be viewed in graphs. The data logger also automatically generate reports weekly which makes it more convenient for the user.

## Accessories



For MIRI® with integrated SAFE Sens (optional), order a different plate with hole to accommodate the SAFE Sens sensor (see ordering information on page 11).

The dishes fit into the inserts so that the heat is directly transferred to the media.

### Heating optimization plates

Each chamber contains a heating optimization plate to facilitate heat transfer directly to the culture dishes.

- Has inserts to fit various dish sizes
- Removable for easy cleaning



Nunc™



Falcon®



Vitrolife



LifeGlobal®  
GPS Dishes



SparMED - Oosafe®

### Total Capacity

Heating plates customized for several types of dishes:

- 4 x Falcon® Ø 50/60 mm
- 8 x Falcon® Ø 35 mm
- 4 x Nunc™ Ø 54/60mm
- 8 x Nunc™ Ø 35 mm
- 4 x Vitrolife Dishes
- 4 x LifeGlobal® GPS Dishes
- 4 x SparMED Oosafe® 4-well dishes
- 4 x SparMED Oosafe® Ø 55/60 mm
- 8 x SparMED Oosafe® Ø 35 mm

\*Applicable for MIRI® only



# SAFE Sens\* Continuous pH Monitoring

The MIRI® can be installed with an integrated SAFE Sens technology for fast, effective, and non-invasive continuous pH monitoring product for *in vitro* fertilization (IVF) procedures.

The SAFE Sens technology employs an optical fluorescent measurement technology, used in combination with disposable sensors, which accurately and reliably monitors the pH of small volumes of fluids such as the media used in IVF.



## Key Features



### Continuous pH measurement

- Reading and recording every 30 minutes (default setting - adjustable).
- Single use sensor probe for up to seven (7) days of pH readings.



### Data Logging System\*\*

- Data Logging and user alarms.
- Each TrakStation® can be connected to multiple incubators.



### Compact and Efficient

- No more unnecessary openings of your incubator for spot pH measurement.
- Only requires 100 µL of media + 50 µL of oil.

\* SAFE Sens is a trademark brand of Blood Cell Storage, Inc. (BCSI). SAFE Sens integration is currently offered as a factory-installed option.

\*\*Minimum system requirements for Data Logger PC/Tablet:

• Intel Core 2 Duo or AMD Athlon X2 at 2.4 GHz processor • 4Gb RAM • 15Gb Hard Disk space • Integrated Video Card • Monitor with resolution 1024 x 768 • Windows 7 pro/ 8 Pro/ 10 OS with 64 Bit architecture • USB 3.0 port for each connected device



MIRA-1014 - Stacking frame for 2 units



MIRI® Stacking Frame with drawer

## MIRI® Stacking Frame

MIRI® has a stacking system to maximize space in your IVF laboratory.

# General Specifications



## MIRI® Multiroom Incubator

Model	MIRI® Dry	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")
Compartment Dimensions	200 x 176 x 25 mm (7.9 x 6.9 x 1")	
Power Supply	230V 50/60 Hz or 115V 60Hz	
Power Consumption	300 W	
Temperature Control Range	24.9 - 40°C	
* 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 - 9.9%	
O <sub>2</sub> Control Range	5 - 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	50 kg (110.2 lbs) (including the pallet's weight)	
Shipping Dimension	860 x 760 x 460 mm (33.9 x 29.9 x 18.1") (unit on the pallet)	

MIRI® Stacking Frame Dimensions	
Stacking frame for 2 units (W x D x H)	717 x 700 x 634 mm (28.2 x 27.6 x 25.0")
MIRI® Stacking Frame with Drawer (W x D x H)	717 x 717 x 434 mm (28.2 x 28.2 x 17.1") On full opening of the drawer: 717 x 1225 x 434 mm (28.2 x 48.2 x 17.1")

\* 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)



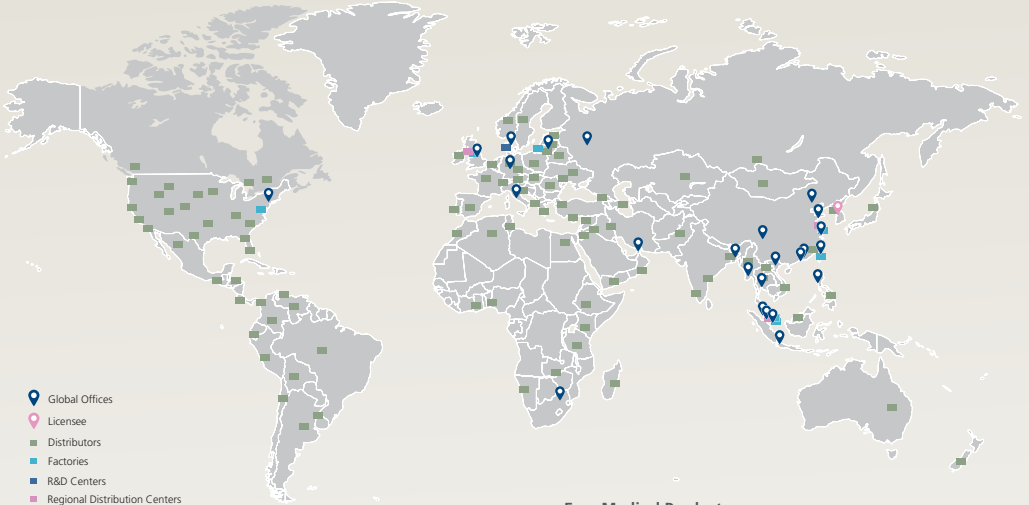
## Ordering Information

ITEM CODE	MODEL CODE	DESCRIPTION
<b>Unit</b>		
2070047	MRI-6A10-8	MIRI® Incubator, 230V, 50/60Hz
2070048	MRI-6A10-9	MIRI® Incubator, 115V, 50/60Hz
2070086	MRI-6A10-SS-8	MIRI® Incubator, with SAFE Sens for pH measurement, 230V, 50/60Hz
2070087	MRI-6A10-SS-9	MIRI® Incubator, with SAFE Sens for pH measurement, 115V, 50/60Hz
2070183	MRI-6A10-H-8	MIRI® Humidity 6 Chamber, 230V
2070184	MRI-6A10-H-9	MIRI® Humidity 6 Chamber, 115V
2070185	MRI-6A10-H-SS-8	MIRI® Humidity 6 chamber with SAFESens for pH monitoring, 230V
2070186	MRI-6A10-H-SS-9	MIRI® Humidity 6 chamber with SAFESens for pH monitoring, 115V
1320045	MRI-GA	MIRI® GA CO <sub>2</sub> / O <sub>2</sub> & Temperature Validation Unit, 115V / 230V
<b>Accessories</b>		
1320191	MRA-SS-TS	SAFE Sens TrakStation, a tablet with SAFE Sens Software, for pH monitoring
1320011	MRA-1007	HEPA/VOC filter (recommended to be replaced every 3 months)
1320018	MRA-1014	Stacking frame for 2 units
1320226	MRA-DRAW	Stacking Frame for 2 Units, With Drawer at the Bottom
1081277	MRA-SS-SV2	SAFE Sens SV2 Sensor, Pack of 10 pieces (shelf-life 12 months)
1081278	MRA-SS-QC2	SAFE Sens QC2 Alignment Tool

## Accessories

ITEM CODE	MODEL CODE	DESCRIPTION
1320003	MRA-FD	Insert for Falcon® Dishes
1320004	MRA-ND	Insert for Nunc™ Dishes
1320070	MRA-VD	Insert for Vitrolife Dishes
1320099	MRA-NID	Insert for Nipro™ Dishes
1320100	MRA-LD	Insert for LifeGlobal® GPS Dishes
1320101	MRA-PD	Insert Without Footprint for Plain Dishes
1320118	MRA-OD	Insert for SparMED Oosafe®
1320219	MRA-FD-SS	Insert for Falcon® Dishes, with hole for SAFE Sens
1320220	MRA-ND-SS	Insert for Nunc™ Dishes, with hole for SAFE Sens
1320221	MRA-VD-SS	Insert for Vitrolife Dishes, with hole for SAFE Sens
1320222	MRA-NID-SS	Insert for Nipro™ Dishes, with hole for SAFE Sens
1320223	MRA-LD-SS	Insert for LifeGlobal® GPS Dishes, with hole for SAFE Sens
1320224	MRA-PD-SS	Insert Without Footprint for Plain Dishes, with hole for SAFE Sens
1320225	MRA-OD-SS	Insert for SparMED Oosafe®, with hole for SAFE Sens

# ESCO LIFESCIENCES GROUP



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### Esco Medical Products:

- MIRI® TL6 Time-Lapse Incubator
- MIRI® TL12 Time-Lapse Incubator
- MIRI® Multiroom Incubator
- MIRI® II-12 Multiroom Incubator
- Mini MIRI® Dry Incubator
- Mini MIRI® Humidity Incubator
- Esco Multi-Zone ART Workstation
- CelCulture® CO<sub>2</sub> Incubator
- MIRI® GA (Gas and Temperature Validation Unit)
- MIRI® AVT
- Versati™ Tabletop Centrifuge
- 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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