

Excellent Embryo Hosting for High Success Rates



# MIRI® II-12

## Multiroom Incubator for IVF

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



# One Patient – One Chamber

## MIRI® II-12 Multiroom IVF Incubator



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# MIRI<sup>®</sup> II-12



MIRI® II-12 Multiroom IVF Incubator dedicates one chamber for one patient to ultimately secure a minimum-stress environment for embryos. The chambers are completely independent of each other. Any disruption on one chamber (e.g. temperature drop after opening the lid) has zero impact on the rest of the system.

## FEATURES:

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### Heated Lid

Prevents condensation and improves temperature regulation by enhancing temperature recovery and uniformity within each chamber.

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### Heated Bottom

Provides direct heat transfer to the cultures through the heating optimization plate for stable heat regulation.



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### Multiroom System

The MIRI® II-12 Multiroom IVF Incubator have multiple independent chambers with very stable environments, allowing embryologist to culture embryos from different patients in individual chambers.

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### Touchscreen PC

Allows user to control and monitor important parameters (temperature, gas concentration) simultaneously and gives visual and audible alarms to signal critical conditions. It has large display that can be easily seen from a distance.

# Maximize Embryo Growth Potential by Providing VIP Treatment



O<sub>2</sub> range: 5.0 – 10.0%  
 CO<sub>2</sub> range: 3.0 – 10.0%  
 Temperature range: 25.0 to 40.0 °C

### Common Stressors:

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

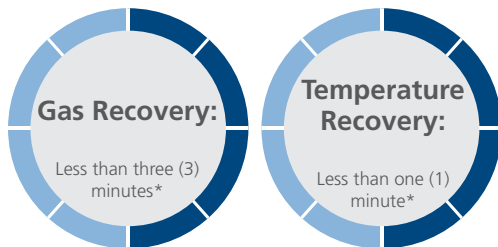
## Elevated O<sub>2</sub> concentration isn't always a good thing

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<sup>®</sup> II-12 has an overall design that provides cultured embryos a minimum-stress environment. The independent chamber system prevents cross-contamination while VOC/HEPA filtration cleans the airstream. The small chamber volumes and direct heat regulation further translate to faster temperature and gas recovery.

## Fast Recovery



One of the benefits of our multiroom incubators is their fast recovery time after opening the lid. This is crucial in order to maintain optimal parameters for embryo incubation.

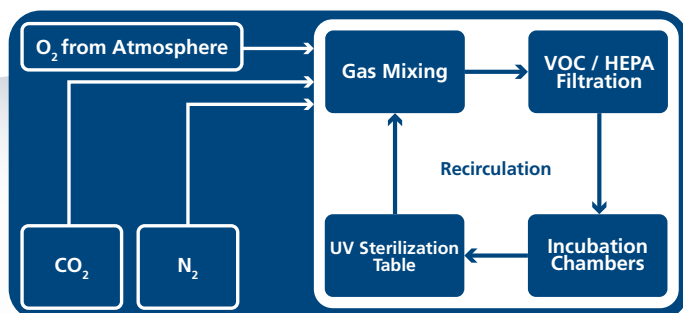
\*If the lid has not been opened for more than 30 sec.

## The Little Details Count



IVF practitioners deal with precious, fragile and sensitive embryos, and often, the little details make a big difference. The MIRI<sup>®</sup> II-12 has a large Touchscreen display that can be easily seen from a distance. Also, the glass lid tops, can be written on — a very useful feature for organization.

There is a possibility to connect an external monitor via an HDMI connector on the back of the device to see the incubation parameters from a more significant distance.



Airflow Diagram

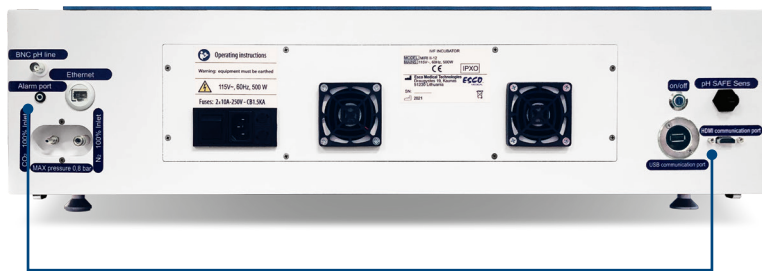
## Provide Total Control of the Gas Phase Environment

The built-in gas mixer and the high-performance CO<sub>2</sub> and O<sub>2</sub> sensors allow to input pure gases and accurately control the gas phase composition within the chambers.

# MIRI<sup>®</sup> II-12 is Built with Excellent Quality Control Features

## Reliable Gas Mixing System

The gas mixer of the MIRI<sup>®</sup> II-12 multiroom IVF incubator gives total control over CO<sub>2</sub> and O<sub>2</sub> concentration inside the chambers while using pure gas. Moreover, the VOC/HEPA filter and UV sterilization ensure that only the highest quality of air is circulated to the cultures.



### A suite of IVF-essential features

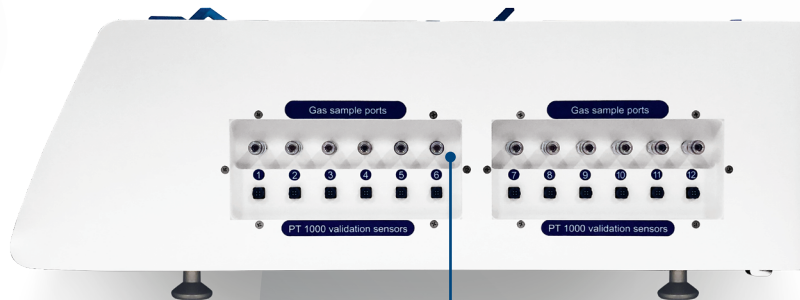
There is a BNC connection for pH measurement, USB communication port, and port for external alarm monitoring. The MIRI<sup>®</sup> II-12 can be connected to a PC to enable data logging via the supplied software included. Connections to external alarm monitoring systems and pH measurements are also possible.



### High quality airstream

The filter module can be easily replaced once used. The gas in the MIRI<sup>®</sup> II-12 is continuously recirculated through a VOC/HEPA filter and a UV-C (254 nm) light that sterilizes the recirculated airstream before it passes through the filter.

## Stress-free Validation of Chamber Parameters



Built-in PT1000 temperature sensors are completely independent from the main circuitry. Therefore they are available for all 12 chambers.

The MIRI<sup>®</sup> II-12 can be connected to an external device such as the MIRI<sup>®</sup> GA for gas and temperature validation.



# Intuitive and User-Friendly Touchscreen PC

Used to control & monitor important parameters (temperature, gas concentration) simultaneously and give visual and audible alarm to signal critical conditions. It has large display that can be easily seen from a distance and since it is a PC, it is equipped with a great deal of features to help make life in the laboratory easier.



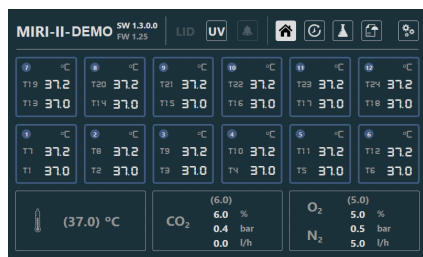
pH Measuring Menu  
 UV Lamp Menu  
 Name of the Device, Serial number, Software and Firmware Versions  
 Chamber Temperature Setpoint  
 Gas concentration Setpoint

**MIRI-II-DEMO** SW 1.2.0.0 FW 1.2 | LID UV [Home] [Refresh] [Eject] [Settings]

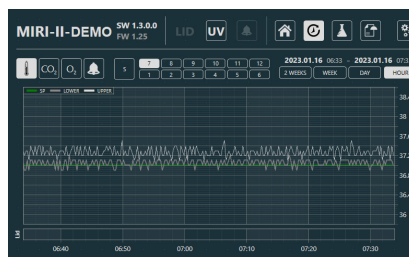
7 °C T19 37.3 T13 37.0	8 °C T20 37.3 T14 37.0	9 °C T21 37.2 T15 37.2	10 °C T22 37.3 T16 37.1	11 °C T23 37.2 T17 37.2	12 °C T24 37.2 T18 37.1
1 °C T7 37.2 T1 37.0	2 °C T8 37.2 T2 37.1	3 °C T9 37.2 T3 37.1	4 °C T10 37.2 T4 37.1	5 °C T11 37.1 T5 37.0	6 °C T12 37.1 T6 37.1

Chamber Temp: (37.0) °C  
 CO<sub>2</sub>: (6.0) 6.0 %  
           0.5 bar  
           0.0 l/h  
 O<sub>2</sub>: (5.0) 5.0 %  
 N<sub>2</sub>: 0.5 bar  
       3.0 l/h

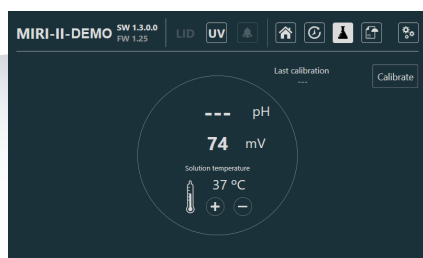
## Full-featured Data Logging Software



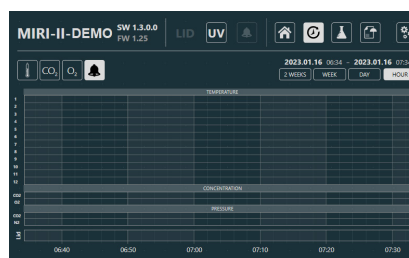
Complete parameters are displayed. Histories of any alarm events are logged.



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<sup>®</sup> into alarm state are recorded. It is possible for the software to send email alerts as well.

All real-time parameters of the machine can be conveniently observed. These include the temperature of all monitored temperature and gas concentration points, gas input pressures, gas flow rates, current gas readings, and all setpoints.

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.

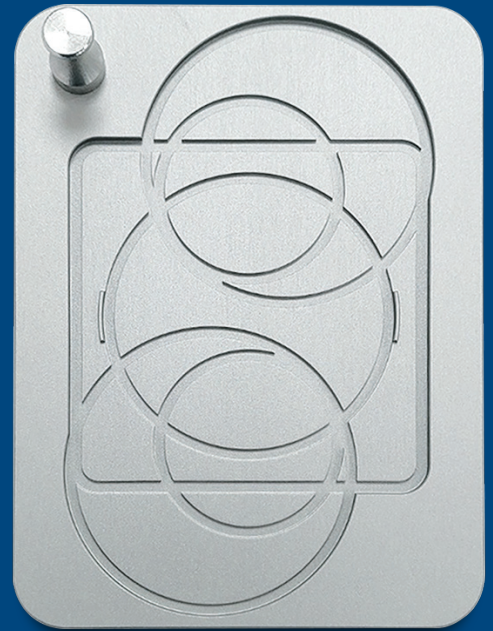


# Just a fitting solution...

MIRI® II-12 comes with specific heating optimization plates matching the type of dishes used in the laboratories.

## Heating Optimization Plates

Each chamber contains a heating optimization plate to facilitate heat transfer directly to the culture dishes. A selection of heating optimization plates is available for various dish sizes.



## General Specifications

### MIRI® II-12 Multiroom IVF Incubators

Overall Dimensions (W x D x H)	700 x 575 x 215 mm (27.6 x 23.0 x 6.5")
Chamber Dimensions	120 x 90 x 26 mm (4.7 x 3.5 x 1")
Net Weight	47 kg
Material	Mild steel / Aluminium / PET / Stainless Steel
Power Supply	115 / 230V 50/60 Hz or 230V 50/60 Hz
Power Consumption	500 W
Temperature Control Range	25 – 40°C
* CO <sub>2</sub> Gas Consumption	<2 L/h
**N <sub>2</sub> Gas Consumption	<12 L/h
CO <sub>2</sub> Control Range	3 – 10%
O <sub>2</sub> Control Range	5 – 10%
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)
Shipping Weight	57 kg (121.3 lbs) (Including the pallet's weight)
Shipping Dimension	890 x 710 x 480 mm (35 x 28 x 18.9") (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® II-12 Stacking Frame for 2 Devices	785 x 599.5 x 798 mm (30.9 x 23.6 x 31.4")
MIRI® II-12 Stacking Frame for 2 Devices with a drawer	762 x 784 x 580 mm (30.0 x 30.9' x 22.8")
	On full opening of the drawer: 762 x 1235 x 580 mm (30.0 x 48.6 x 22.8")

# Ordering Information

## Stacking Frames



**MRA2-DRAW** - MIRI® Stacking Frame for 2 devices with a drawer



**MRA2-1014** - MIRI® Stacking Frame for 2 devices

MIRI® II-12 Multiroom Incubator		
Item Code	Model Code	Description
Device		
2070164	MRI2-12C-8	MIRI® II-12 Multiroom Incubator, 230V, 50/60Hz
2070165	MRI2-12C-9	MIRI® II-12 Multiroom Incubator, 115V, 50/60Hz
Accessories		
1320011	MRA-1007	HEPA/VOC filter (recommended to be replaced every 3 months)
1320498	MRA2-1014	MIRI® Stacking Frame for 2 devices
1320499	MRA2-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

Heating Optimization Plates		
Item Code	Model Code	Description
1320003	MRA-FD	Heating optimization plate for Falcon® Dishes
1320004	MRA-ND	Heating optimization plate for Nunc™ Dishes
1320070	MRA-VD	Heating optimization plate for Vitrolife Dishes
1320099	MRA-NID	Heating optimization plate for Nipro™ Dishes
1320100	MRA-LD	Heating optimization plate for LifeGlobal® GPS Dishes
1320101	MRA-PD	Heating optimization plate without footprint for Plain Dishes
1320118	MRA-OD	Heating optimization plate for SparMED Oosafe®
1320507	MRA-BIRR	Heating optimization plate for BIRR Dishes



# ESCO LIFESCIENCES GROUP



## 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.*



**Esco Medical, Aps**  
 Kringelled 10, 8250 Egaa, Denmark  
 medical@escolifesciences.com  
[www.esco-medical.com](http://www.esco-medical.com)

**Esco Micro, Pte. Ltd. (Headquarters)**  
 19 Changi South Street 1, Singapore 486 779  
 Tel +65 6542 0833

**Esco Global Offices:** Bangladesh | China | Denmark | Germany | Hong Kong | Indonesia | Lithuania | Malaysia | Myanmar | Philippines | Russia | Singapore | South Africa | South Korea | Taiwan | Thailand | UAE | UK | USA | Vietnam