MIRI® Incubators Combined Catalogue

for Embryo Culture Incubation

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About Embryo Culture

Embryo incubation is a crucial step in all In Vitro Fertilization (IVF) procedures. The process involves the development of embryos in culture dishes using a suitable media, in a specific incubator, through different stages such as fertilization, cleavage, and blastocyst.

IVF is an Assisted Reproductive Technology that requires incubators to provide a temporary environment for embryos before they are implanted back into the female. IVF incubators are designed to mimic the woman's uterine environment, which is essential for embryo development. Therefore, IVF laboratories consider culture incubators as critical equipment as they provide a stable and suitable environment, reducing environmental stress to gametes.

The incubators control parameters such as carbon dioxide levels/pH, oxygen concentration, humidity/ evaporation/media osmolality, and temperature, which affect embryo development. Esco Medical offers a range of incubator models suitable for the needs of IVF laboratories and clinics.

This catalogue will guide and inform you about Esco Medical's different incubators.

MIRI® M

NEW PRODUCT

The Esco Medical MIRI® M multiroom IVF incubator is a modular system consisting of a docking station and movable chambers. The incubator can have up to 18 chambers, each being movable, keeping samples safe in a stable gas and regulated temperature environment. The display depicts the patient's name being held in that chamber and allows for visual confirmation. Built-in software takes care of the digital verification.

Key Features

Ergonomic Design

- Specially designed grip points for enhanced stability.

Movable Chambers

- Stable temperature even when undocked up to 30 mins.

Built-In Digital Traceability

- Dish's movements and actions are continuously tracked anytime anywhere, docked or undocked.

Advanced Alarm System

- Informative conditions through expansive notifications and pop-ups, icons, and colors on screens and backlights.

Practical User Interface

- Integrated software for easy observation and adjustment through the incubator's touch-screen interface.

Improved Multiroom System

- Gas recovery: < 3 min for CO_2, < 5 min for O_2 after docking the chamber.
- Temperature recovery: <1 min after opening the lid for less than 10 secs.
- Temperature stability: ± 0.1°C within the setpoint | Gas stability: ± 0.2% within the setpoint.

Prolonged Undisturbed Incubation

Designed for ultimate mobility, MIRI® M Chambers allow embryos to stay in their optimal environment for extended periods - ensuring stability, minimizing disturbance and maintaining consistent incubation conditions.

Improved Sample Transportation

Engineered with an improved, state-of-the-art transportation system, MIRI® M Chambers provide users with a larger, more ergonomic surface to hold onto, significantly enhancing grip and control during manual carrying.

Heating Optimization Plates

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

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.

Ordering Information

Item Code	Model Code	Description
2070226	MRI-M-DS18C-8/9	MIRI® M Multiroom Incubator (Docking Station + 18 Chambers)

Item Code	Model Code	Description
1320552	MRI-M-VOC	MIRI® M VOC/HEPA Filter
1320553	MRI-M-FD	MIRI® M Heating Optimization Plate for Falcon® dishes
1320554	MRI-M-ND	MIRI® M Heating Optimization Plate for Nunc™ dishes
1320555	MRI-M-BD	MIRI® M Heating Optimization Plate for BIRR dishes
1320556	MRI-M-PD	MIRI® M Heating Optimization Plate without footprint for Plain dishes

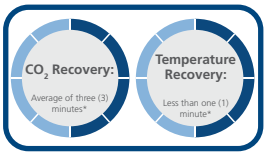
MIRI® TL

MIRI® TL is a Time-Lapse incubator that monitors embryo development. The MIRI® 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® TL6: 6 Individual chambers.
MIRI® TL12: 12 Individual chambers.



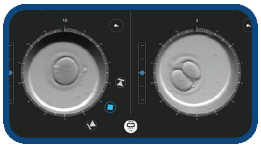
Unprecedented Faster Recovery

- 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.

CO_2 recovery: average of three (3) minutes.
Temperature recovery: less than one (1) minute.

*If the lid has not been open for more than 10 seconds (based on internal testing; performance may vary depending on various factors and environmental conditions).



Sophisticated Annotation Tools

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

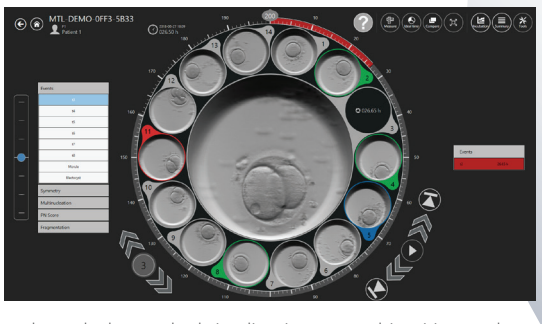
Quality checking is easy

- 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.

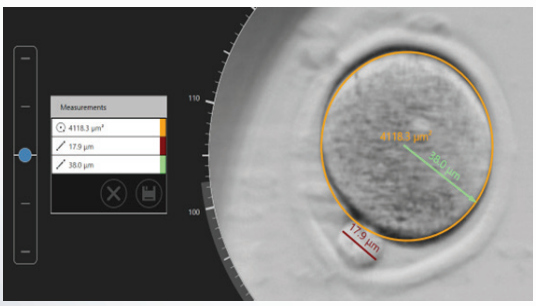
This equipment is a CE-marked device and is in conformity with the essential requirements of the medical devices EU regulation 2017/745.

Embryo Analysis and Evaluation System

The MIRI® TL Viewer Software is a simple yet sophisticated information-providing tool that can help embryologists process the data gnerated. 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®. 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.

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_2) *	< 2 L/h	
Gas Consumption (N_2) **	< 5 L/h	
CO_2 Control Range	2.9% - 9.9%	
O_2 Control Range	2.0% - 20.0%	5.0% - 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
Operating altitude	Up to 2000 meters (6560 feet or 80kPa – 106kPa)	

* Under normal condition (CO_2 set point reached at 6.0%, all lids closed). ** Under normal condition (O_2 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_2/O_2 & 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® 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_2 Range	1.9 - 10.0%
Incubation O_2 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.
- **Independent Chambers**
  Any disruption (e.g., temperature drop after opening the lid) has zero impact on the rest of the system.
- **Direct Heat Transfer**
  Provides superior temperature stability.
- **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. While the chambers operate independently, setpoints are common across all chambers rather than individual. 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 CO_2 recovery.

*If the lid has not been open for more than 10 seconds (based on internal testing; performance may vary depending on various factors and environmental conditions)

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_2 and O_2 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

MIRI® II-12 Multiroom Incubator

The MIRI® II-12 is an incubator that provides unique features for every IVF laboratories and clinics. The chambers are specially designed to accommodate one patient ensuring personal space for each embryo. Having an excellent footprint, MIRI® II-12 is made to perfectly fit every IVF lab.

Independent Chambers

Each chamber is specially designed for one patient. Hence, there is no disturbance to other chambers even when a lid is opened/closed.

Excellent Footprint

With its compact size, it can perfectly fit in every IVF Lab.

Low Gas Consumption

The built-in gas mixer and efficient recirculation system allows you to save on gas consumption.

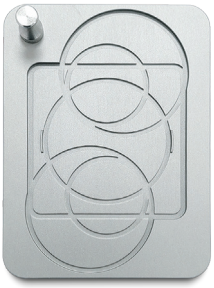
This equipment is a CE-marked device and is in conformity with the essential requirements of the medical devices EU regulation 2017/745.

Just a fitting solution...

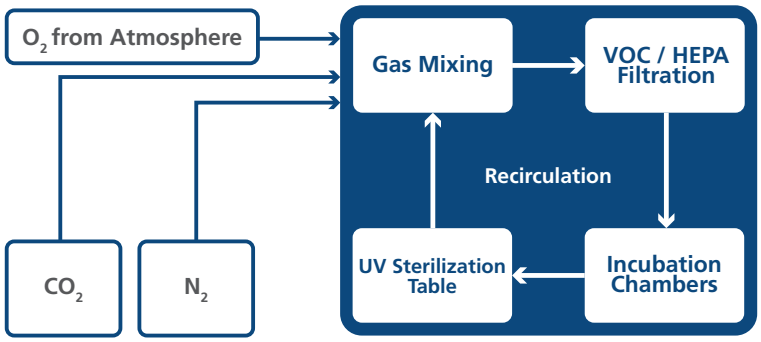
MIRI® II-12 comes with specific heating optimization plates matching the type of dishes used in the laboratories.

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

• There is a choice between various heating optimization plates.



Airflow Diagram



Total control of the gas phase environment is provided. The built-in gas mixer and the high-performance CO_2 and O_2 sensors allow accurate control of gas composition in the chambers.

Stacking Frames

MRA2-DRAW - MIRI® II-12 Stacking Frame for 2 devices with a drawer

MRA2-1014 - MIRI® II-12 Stacking Frame for 2 devices

General Specifications

MIRI® Multiroom IVF Incubator

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	
Temperature Control Range	24.9 – 40.0 °C	
*CO_2 Gas Consumption	<2 L/h	<4 L/h
**N_2 Gas Consumption	<12 L/h	
CO_2 Control Range	2.0 – 9.9%	
O_2 Control Range	5.0 – 20.0%	
Input Gas Pressure	0.4 – 0.6 bar (5.80 – 8.70 PSI)	
Operating altitude	Up to 2000 meters (6560 feet or 80kPa – 106kPa)	
Net Weight	40 kg (88.2 lbs)	
Shipping Weight	45 kg (99.2 lbs) (Including the pallet's weight)	
Shipping Dimension	860 x 724 x 489 mm (32.4" X 28.5" x 19.3") (device on pallet)	

MIRI® II-12 Multiroom IVF Incubator

Overall Dimensions (W x D x H)	740 x 575 x 215 mm (29.1 x 22.6 x 8.5")
Compartment Dimensions	120 x 90 x 26 mm (4.7 x 3.5 x 1")
Power Supply	115 / 230V, 50/60 Hz
Power Consumption	500 W
Temperature Control Range	25.0 – 40.0 °C
*CO_2 Gas Consumption	<2 L/h
**N_2 Gas Consumption	<12 L/h
CO_2 Control Range	3.0 – 10.0%
O_2 Control Range	5.0 – 10.0%
Input Gas Pressure	0.4 – 0.6 bar (5.80 – 8.70 PSI)
Operating altitude	Up to 2000 meters (6560 feet or 80kPa – 106kPa)
Net Weight	47 kg
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_2 setpoint reached at 5.0%, all lids closed)* *** Under normal condition (O_2 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")
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

Item Code	Model Code	Description
MIRI® Multiroom Incubator		
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
MIRI® II-12 Multiroom Incubator		
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	VOC/HEPA filter (recommended to be changed every 3 months)
1320018	MRA-1014	MIRI® Stacking frame for 2 devices
1320226	MRA-DRAW	MIRI® Stacking frame with a drawer for 2 devices
1320498	MRA2-1014	MIRI® II-12 Stacking frame for 2 devices
1320499	MRA2-DRAW	MIRI® II-12 Stacking frame with a drawer for 2 devices
1320045	MRI-GA	MIRI® GA CO_2 / O_2 & Temperature Validation Unit, 115V / 230V (cannot be used with MIRI® Humidity Multiroom Incubator)

Mini MIRI® Multiroom Incubator

Built on the strong and reliable MIRI® Multiroom Incubator's platform, the Mini MIRI® is an incubator that provides a stable culture environment. It has two chambers that prevent cross-contamination while VOC/HEPA filtration cleans the incoming airstream. The compact design and direct heat regulation further translate to faster temperature and gas recovery. While the chambers operate independently, setpoints are common across all chambers rather than individual.

Comes in two models:

Mini MIRI® Humidity

- The water bottle is located on the side of the device for easy refilling and control of the water level.
- Passive humidification system

Mini MIRI® Dry

- Has a built-in gas mixer. Premixed gas is not required
- Comes with a UV module and VOC/HEPA filter.

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

Model	Mini MIRI® Dry	Mini MIRI® Humidity
Overall Dimensions (W x D x H)	525 x 420 x 230 mm (20.7 x 16.5 x 9.1")	
Chamber Dimensions	200 x 176 x 25 mm (7.9 x 6.9 x 1")	
Power Supply	115 / 230V, 50/60 Hz	
Power Consumption	160 W	
Temperature Control Range	24.9 – 40.0 °C	
*CO_2 Gas Consumption	<2 L/h	< 4 L/h
**N_2 Gas Consumption	<8 L/h	<12 L/h
Input Gas Pressure	0.4 – 0.6 bar (5.80 – 8.70 PSI)	
CO_2 Control Range	1.9 – 9.9%	
O_2 Control Range	3.9 – 19.9%	
Operating altitude	Up to 2000 meters (6560 feet or 80kPa – 106kPa)	
Net weight	22 kg (48.5 lbs)	
Shipping weight	30 kg (66.1 lbs) (Including the pallet's weight)	
Shipping Dimensions	630 x 525 x 500 mm (24.8 x 20.7 x 19.7") (device on the pallet)	

* *Under normal condition (CO_2 setpoint reached at 6.0%, all lids closed)* ** *Under normal condition (O_2 setpoint reached at 5.0%, all lids closed)*

Ordering Information

Item Code	Model Code	Description
Device		
2070143	MRI-MINI-D-8	Mini MIRI® Dry Multiroom Incubator, 230V, 50/60Hz
2070144	MRI-MINI-D-9	Mini MIRI® Dry Multiroom Incubator, 115V, 50/60Hz
2070155	MRI-MINI-H-8	Mini MIRI® Humidity Multiroom Incubator 230V, 50/60Hz
2070156	MRI-MINI-H-9	Mini MIRI® Humidity Multiroom Incubator, 115V, 50/60Hz
Accessories		
1320011	MRA-1007	VOC/HEPA filter (recommended to be changed every 3 months)
1320142	MRI-DATA	Datalogger Package with an Intel® NUC Box, monitor etc.
1320045	MRI-GA	MIRI® GA CO_2 / O_2 & Temperature Validation Unit, 115V / 230V (cannot be used with Mini MIRI® Humidity Multiroom Incubator)

Heating Optimization Plates for MIRI® Family's Multiroom IVF Incubators

Extensive list of the heating optimization plates for MIRI®, MIRI® II-12, and Mini MIRI® Multiroom IVF Incubators

When placing an order for MIRI®, MIRI® II-12 or Mini MIRI®, all you have to do is select the appropriate heating optimization plate(s) that match the dishes used in your laboratory. There are no limitations to the choice you make, giving you the freedom and flexibility to choose as per your requirements. The MIRI®, MIRI® II-12 and Mini MIRI® can easily be incorporated into your existing work routine.

All heating optimization plates are optimized for the direct transfer of heat to the dishes and are totally removable for easy cleaning. This is to ensure optimal conditions for your embryos.


Nunc™


Falcon®


Vitrolife


LifeGlobal® GPS Dishes

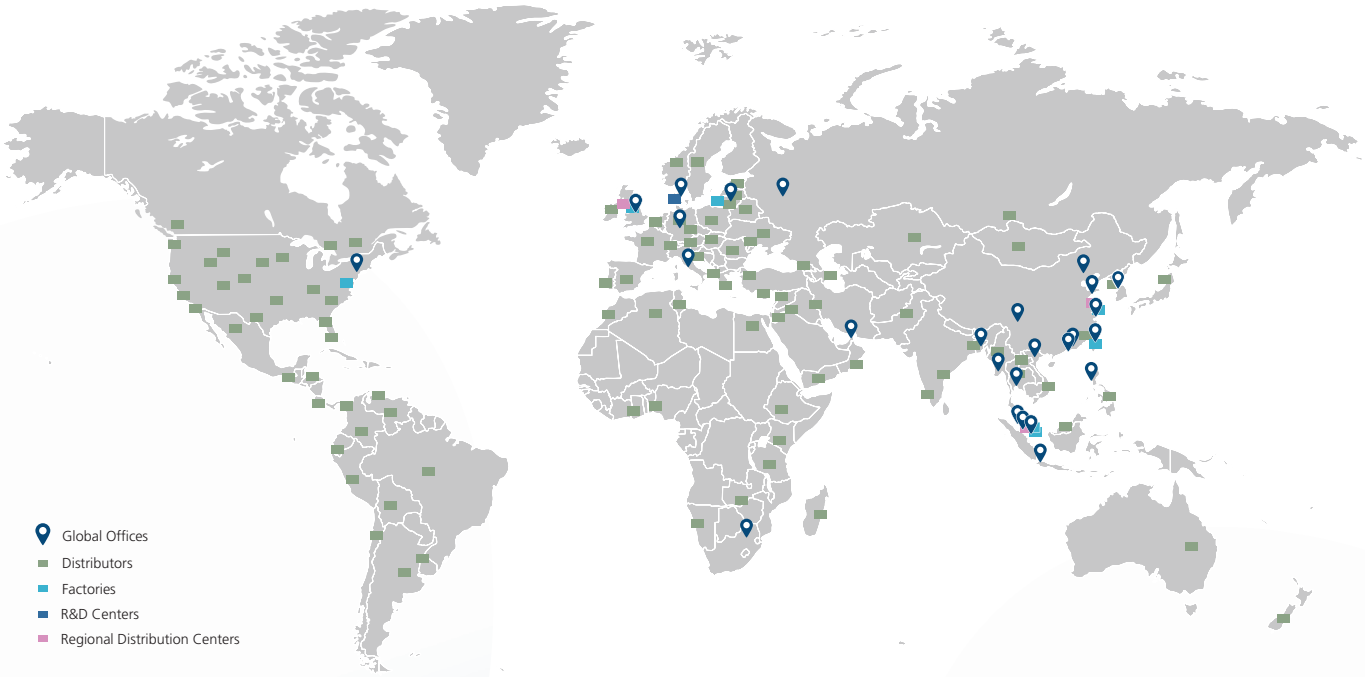

BIRR


SparMED Oosafe®

Ordering Information

Item Code	Model Code	Description
For MIRI® and Mini MIRI®		
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
For MIRI® II-12		
1320429	MRA2-FD	Heating optimization plate for Falcon® Dishes
1320430	MRA2-ND	Heating optimization plate for Nunc™ Dishes
1320431	MRA2-VD	Heating optimization plate for Vitrolife Dishes
1320433	MRA2-LD	Heating optimization plate for LifeGlobal® GPS Dishes
1320436	MRA2-OD	Heating optimization plate for SparMED Oosafe®
1320434	MRA2-PD	Heating optimization plate without footprint for Plain Dish
1320505	MRA2-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_2 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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9010540_Blue_MIRI Incubators Combined Catalogue_A4_vL_101725

Designed and Made in the E.U.