VIP treatment for high success rate embryos in IVF
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.

**Direct Heat Transfer**
- Provides superior temperature stability.
- Less than one (1) minute of temperature recovery.

**Six (6) Chambers**
- 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 much simpler since there is no crossover of heat from adjacent chamber.
- The small chamber volume allows for gas composition recovery in less than three (3) minutes and temperature recovery in less than one (1) minute.

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

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.

**LED Display**
Has large LED display that can be easily seen from a distance.

About Esco Medical
Esco Medical is one of the divisions of the Esco Group of companies, which targets innovative technological solutions for fertility clinics and laboratories. Esco Medical is the leading manufacturer and innovator of high quality IVF equipment that are designed in Denmark and mostly made in the EU.
Hand in hand to provide only the best in embryo incubation

Heated Bottom
• Provides direct heat to the cultures through the heating optimization plates.
  • Accuracy: ± 0.2 ºC
  • Uniformity: ± 0.2 ºC

Removable Heating Optimization Plate
• Wide selection of inserts to fit in your preferred culture dishes (see page 6).
• The optimization plate facilitates the direct transfer of the heat from the bottom plate to the media.

Control Panel Buttons
The simple 4-button control panel allows for easy and intuitive operation.

Heated Lid
• Prevents condensation
• Enhances temperature regulation and recovery
• Excellent uniformity between the top and the bottom
  • Accuracy: ± 0.2 ºC
  • Uniformity: ± 0.2 ºC

Optional SAFE Sens® Integration
For continuous pH monitoring. See page 6 for more info.

Oil
Media
The dishes fit into the inserts so that the heat is directly transferred to the media.
Fast Recovery
There are many advantages to using benchtop multi-room incubators. One important benefit is the speed of recovering temperature and gas parameters after opening a chamber.

Gas Recovery: Less than three (3) minutes
Temperature Recovery: Less than one (1) minute

Elevated O₂ concentration isn’t always a good thing
While oxygen (O₂) 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 6-chamber format 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.

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, while acting as chamber insulators, can be written on — a very useful feature for organization.

Maximize embryo growth potential by providing VIP treatment

Airflow Diagram

O₂ from atmosphere
CO₂
N₂
UV sterilization
Incubation chambers
HEPA+VOC filtration
Gas mixing
Recirculation
Provide total control of the gas phase environment
The built-in gas mixer and the high-performance CO₂ and O₂ sensors allow accurate control of gas phase composition in the chambers.
The Miri® is built with Excellent Quality Control Features

**The Miri® has reliable gas mixing system that allows gas phase flexibility.**
The gas mixer of Miri® gives total control over CO₂ and O₂ concentration levels while also giving flexibility over what gas input is desired.***
Moreover, the HEPA+VOC filter and UV sterilization* ensure only the highest quality of air is circulated to the cultures.

**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.

**Pre-mixed gas is NOT required**
The use of 100% CO₂ and 100% N₂ allows the incubator to achieve steady-state gas condition faster than premixed gases. This is important as this will stabilize the pH during embryo development.

**High quality airstream via HEPA+VOC filter + UV**
The gas in the Miri® is continuously recirculated through a HEPA/VOC filter. A UV-C light (185 nm) sterilizes the airstream before passing through the filter.

**A suite of IVF-essential features**
The Miri® can be connected to a PC to avail of data logging via the supplied software included. Connections to external alarm monitoring systems and pH measurements** are also possible.

**Full-featured and user-friendly Control panel, display, and data logging software**
The Miri® can be connected to an easy-to-use, feature-packed data logging software installed on any ordinary 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 datalogger also automatically generate reports weekly which makes it more convenient for the user.

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* Not available in US
**pH measurement data logging, pH measurement through pH probe is not available in the US. See page 6 for optional Safe Sens integration for continuous pH measurement.
*** Input of pure gases is recommended
Accessories

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

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

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 54/60 mm
• 8 x Nunc® Ø 35 mm
• 4 x Vitrolife® Dishes
• 4 x LifeGlobal / GPS Dishes™
• 4 x Nippon™
• 4 x Sparmed - Oosafe™

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.

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.

Key Features

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 datalogger 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 Prof/ 10 OS with 64 Bit architecture • USB 3.0 port for each connected device

Miri® Tablet PC and Holder

Let go of bulky computers and save space with a tablet. Monitor the performance of your Miri® incubator with a full-featured and user-friendly control panel, display and data logging software.

* Tablet holder can fit tablets with maximum of 26mm thickness and 201mm height.

Miri® Stacking Frame

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

MRA-1014 - Stacking frame for 2 units
Miri® Stacking Frame with drawer
Miri® General Specifications

<table>
<thead>
<tr>
<th>Miri® MULTI-ROOM INCUBATOR : PRODUCT CODE: MRI-6A10- --</th>
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<tbody>
<tr>
<td><strong>Overall Dimensions (W x D x H)</strong></td>
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<tr>
<td><strong>Power Supply</strong></td>
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<tr>
<td><strong>Power Consumption</strong></td>
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<tr>
<td><strong>Temperature Control Range</strong></td>
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<tr>
<td><strong>Gas Consumption (CO₂)</strong></td>
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<tr>
<td><strong>Gas Consumption (N₂)</strong></td>
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<td><strong>CO₂ Control Range</strong></td>
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<tr>
<td><strong>O₂ Control Range</strong></td>
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<tr>
<td><strong>Input Gas Pressure (CO₂)</strong></td>
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<td><strong>Input Gas Pressure (N₂)</strong></td>
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<td><strong>Shipping Weight</strong></td>
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<td><strong>Shipping Dimension</strong></td>
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* Under normal condition (CO₂ set point reached at 5.0%, all lids closed)
** Under normal condition (O₂ set point reached at 5.0%, all lids closed)

Ordering Information

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<thead>
<tr>
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<td>2070047</td>
<td>MRI-6A10-9</td>
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<td>2070048</td>
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<td>MRI-6A10-SS-8</td>
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<td>MRI-GA</td>
<td>Miri® GA CO₂ / O₂ &amp; Temperature Validation Unit, 115V / 230V</td>
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<td>PC Holder for Miri®</td>
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<td>1320011</td>
<td>MRA-1007</td>
<td>HEPA+VOC filter (recommended to be replaced every 3 months)</td>
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<td>1320018</td>
<td>MRA-1014</td>
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<td>1081278</td>
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<td>SAFE Sens QC2 Alignment Tool</td>
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Infertility is viewed as a problem that has social, psychological, and economic impacts to the afflicted individuals and couples. It is a global concern that knows no race nor creed. It has been estimated that 1 in 6 couples would struggle with infertility at least once in their lifetime.

The vision of Esco Medical is to support Assisted Reproductive Technologies (ART), such as IVF, by developing practical and state-of-the-art technological solutions for improving clinical success rates and patient satisfaction. All Esco Medical products are designed with the IVF clinic in mind and developed 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.

It is on these foundations that Esco Medical remains committed to providing world class ART, worldwide. At Esco Medical, life has begun.