VIP treatment for high success rate embryos in IVF

Miri®
Multi-room Incubator for IVF
Affordable Quality - Excellent Stability

Just a few of the things you’ll love about the Miri® Multi-room Benchtop Incubator, packed with great features.
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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 to provide only the best in embryo incubation”
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.

FEATURES:

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

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.
  • Accuracy and Uniformity: ± 0.2 °C

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

Six (6) Chambers
• Completely individual chambers for easier calibration, faster recovery, less disruption, and prevents cross-contamination.

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.

Mute Button
Temporarily mutes alarm messages and sound for five (5) minutes.
Maximize embryo growth potential by providing VIP treatment

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.

Fast Recovery

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

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.

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.

Provide total control of the gas phase environment
Airflow Diagram

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.

Pre-mixed gas is NOT required
Miri® can accept pure gas (and even pre-mixed gas if desired).
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 filter module can be easily replaced once used.
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
BNC connection for pH monitoring**, USB communication port, and port for external alarm monitoring.
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.

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.
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.

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

Total Capacity
Heating plates customized for several types of dishes:
- 4 × Falcon® Ø 50/60 mm
- 8 × Falcon® Ø 35 mm
- 4 × Nunc® Ø 54/60 mm
- 8 × Nunc® Ø 35 mm
- 4 × Vitrolife® Dishes
- 4 × LifeGlobal / GPS Dishes™
- 4 × Nippon™
- 4 × 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.

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 + 150 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 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 Pro/ 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.
## General Specifications

### Miri® Multi-room incubator:
**PRODUCT CODE: MRI-6A10-__-__**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Dimensions (W x D x H)</td>
<td>700 x 580 x 150 mm (27.6” x 22.9” x 6”)</td>
</tr>
<tr>
<td>Power Supply</td>
<td>115 / 230V, 50/60 Hz</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>280 W</td>
</tr>
<tr>
<td>Temperature Control Range</td>
<td>25 - 40°C</td>
</tr>
<tr>
<td>*Gas Consumption (CO&lt;sub&gt;2&lt;/sub&gt;)</td>
<td>&lt; 2 L/h</td>
</tr>
<tr>
<td>**Gas Consumption (N&lt;sub&gt;2&lt;/sub&gt;)</td>
<td>&lt; 12 L/h</td>
</tr>
<tr>
<td>CO&lt;sub&gt;2&lt;/sub&gt; Control Range</td>
<td>1.9 - 10%</td>
</tr>
<tr>
<td>O&lt;sub&gt;2&lt;/sub&gt; Control Range</td>
<td>5 - 20%</td>
</tr>
<tr>
<td>Input Gas Pressure (CO&lt;sub&gt;2&lt;/sub&gt;)</td>
<td>0.6 bar (8.7 psi)</td>
</tr>
<tr>
<td>Input Gas Pressure (N&lt;sub&gt;2&lt;/sub&gt;)</td>
<td>0.6 bar (8.7 psi)</td>
</tr>
<tr>
<td>Net Weight</td>
<td>35 kg (77.2 lbs)</td>
</tr>
<tr>
<td>Shipping Weight</td>
<td>40 kg (88.2 lbs)</td>
</tr>
<tr>
<td>Shipping Dimension</td>
<td>840 x 735 x 300 mm (33.1” X 29” x 11.9”)</td>
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</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>ITEM CODE</th>
<th>MODEL CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2070047</td>
<td>MRI-6A10-8</td>
<td>Miri® Incubator; 230V, 50/60Hz</td>
</tr>
<tr>
<td>2070048</td>
<td>MRI-6A10-9</td>
<td>Miri® Incubator; 115V, 50/60Hz</td>
</tr>
<tr>
<td>2070086</td>
<td>MRI-6A10-SS-8</td>
<td>Miri® Incubator; with SAFE Sens for pH measurement, 230V, 50/60Hz</td>
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<tr>
<td>2070087</td>
<td>MRI-6A10-SS-9</td>
<td>Miri® Incubator; with SAFE Sens for pH measurement, 115V, 50/60Hz</td>
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<tr>
<td>1320045</td>
<td>MRI-GA</td>
<td>Miri® GA CO₂ / O₂ &amp; Temperature Validation Unit, 115V / 230V</td>
</tr>
<tr>
<td><strong>Accessories</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1320140</td>
<td>TBA</td>
<td>PC Holder for Miri®</td>
</tr>
<tr>
<td>1320141</td>
<td>TBA</td>
<td>Tablet PC for Data Logging of MRI-6A10</td>
</tr>
<tr>
<td>1320142</td>
<td>TBA</td>
<td>Set of Tablet PC and Holder For Data Logging of MRI-6A10</td>
</tr>
<tr>
<td>1320191</td>
<td>TBA</td>
<td>SAFE Sens TrakStation, a tablet with SAFE Sens Software, for pH monitoring</td>
</tr>
<tr>
<td>1320011</td>
<td>MRA-1007</td>
<td>HEPA+VOC filter (recommended to be replaced every 3 months)</td>
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<tr>
<td>1320018</td>
<td>MRA-1014</td>
<td>Stacking frame for 2 units</td>
</tr>
<tr>
<td>1320226</td>
<td>TBA</td>
<td>Stacking Frame for 2 Units, With Drawer at the Bottom</td>
</tr>
<tr>
<td>1081277</td>
<td>TBA</td>
<td>SAFE Sens SV2 Sensor, Pack of 10 pieces (shelf-life 12 months)</td>
</tr>
<tr>
<td>1081278</td>
<td>TBA</td>
<td>SAFE Sens QC2 Alignment Tool</td>
</tr>
</tbody>
</table>

| **Accessories** |              |                                                                             |
| 132003         | TBA           | Insert for Falcon® Dishes                                                  |
| 132004         | TBA           | Insert for NUNC® Dishes                                                    |
| 1320070        | TBA           | Insert for Vitrolife® Dishes                                               |
| 1320099        | TBA           | Insert for Nipro Dishes                                                    |
| 1320100        | TBA           | Insert for LifeGlobal/ GPS Dishes™                                        |
| 1320101        | TBA           | Insert Without Footprint for Plain Dishes                                  |
| 1320118        | TBA           | Insert for Sparmed - Oosafe™                                               |
| 1320219        | TBA           | Insert for Falcon® Dishes, with hole for SAFE Sens                          |
| 1320220        | TBA           | Insert for NUNC® Dishes, with hole for SAFE Sens                            |
| 1320221        | TBA           | Insert for Vitrolife® Dishes, with hole for SAFE Sens                       |
| 1320222        | TBA           | Insert for Nipro Dishes, with hole for SAFE Sens                            |
| 1320223        | TBA           | Insert for LifeGlobal/ GPS Dishes™, with hole for SAFE Sens                 |
| 1320224        | TBA           | Insert Without Footprint for Plain Dishes, with hole for SAFE Sens          |
| 1320225        | TBA           | Insert for Sparmed - Oosafe™, with hole for SAFE Sens                       |
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.