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Research Instruments (RI) was founded in London in 1962. A global leader in micromanipulation technology, the company moved into the fertility industry in the early 1990s. Working closely with pioneers in the field such as Dr Simon Fishel, RI refined its products to meet the needs of those perfecting ground breaking techniques.

This continued partnership with innovating embryologists to pinpoint exactly what ART clinics require has led the company to be the largest hardware ART supplier in the world with a global network of distributors and a comprehensive product portfolio.

In 2016 IVF market leaders RI, ORIGIO, The Pipette Company, K-Systems, Reprogenetics, Recombine and Genesis Genetics joined forces, as CooperSurgical companies, to provide a world class service for ART professionals.

We are now working in partnership, pooling our scientific knowledge and continuing to collaborate with ART experts, to develop and provide a full system of innovative products for the complete IVF process.

For more information visit our website at research-instruments.com
“Using the Integra 3 system we have seen a huge 20% increase in positive pregnancy outcomes after ICSI and embryo quality is consistently good. The improved temperature control over the objective during the ICSI procedure, as a result of the Thermosafe system, is a significant factor.”

Dr Steve Green
Origin Fertility Belfast, Northern Ireland
INTEGRA 3™

The World’s Most Advanced Micromanipulation System

- **NO COLD SPOTS**
  Thermosafe maintains sample temperature with a gentle stream of warm air under the Petri dish

- **ACCURATE**
  New extra-fine mechanisms for smooth and precise movement of the stage and micropipettes

- **SUPER-FAST**
  Improved rapid micropipette set-up with one-step angle adjustment
FEATURING THERMOSAFE

The new Integra 3 features the revolutionary Thermosafe which, by passing a gentle stream of air under the Petri dish, maintains sample temperature across the dish. A 3.5 inch colour touch screen display allows you to check and control temperature and track procedure time. The thermal images below, taken with a 40x objective in place on an inverted microscope, display the cooling effect of the objective in the centre of the dish with and without Thermosafe.

Put simply, Thermosafe is an integral heating system that helps to keep samples at the optimum temperature.

The result is no more cold spots, no more hot spots or ambiguity.
**PRACTICAL**
Every detail of the Integra 3 is geared towards one goal – to ensure you create the best possible conditions for ICSI and sample manipulation.

**TEMPERATURE CONTROL**
Advanced temperature control in comparison with a glass ITO and metal plate without Thermosafe.

**EASY TO USE**
Simple touch screen controls for adjusting stage temperature.

**WITH THERMOSAFE**
RI heated metal insert with Thermosafe air heating system.

- Uniform dish temperature
- No hot spots, no cold spots.

Thermosafe prevents the objective from cooling the dish.

Heated metal insert

Thermosafe air heating system
We recognise that temperature and time are critical within an ART lab. Integra 3 is ultra-responsive and effortlessly smooth, so it’s quick and easy to use, thanks to RI’s advanced mechanical design. You can change micropipettes in seconds, which can transform the efficiency of your lab overnight.

We have increased the size of the integrated heated stage by 40% but kept the footprint to a minimum to keep your work area uncluttered.

We have added a whole spectrum of other functions and features that make the Integra 3 the most intuitive and ergonomic mechanical micromanipulation system on the market.

**PRECISE & INTUITIVE CONTROL**

When you perform ART micromanipulation procedures, accuracy is paramount. Integra 3 offers the finest possible movement of the XY stage and fine and coarse levers as well as a choice of oil or air syringes for the control of specimens.

**SYRINGES**

The Integra 3 includes two of our SAS air syringes as standard. These syringes offer superb control and eliminate the need for oil. Also available is the SAS-SE for superfine air control, or our SOS oil syringe with a quick fill feature for minimum set-up time.

**RI VIEWER™ SOFTWARE**

You can use the Integra 3 without a computer or camera. However, if you connect it to a computer, we can supply RI Viewer software. With RI Viewer you can use the shortcut keys.

Enjoy sharp full screen imaging from the microscope, with digital magnification and a modern, clean user interface. It also offers line measurement tools and a built-in simulator for training and demonstration purposes. RI Viewer also allows you to synchronise with Saturn Laser and IMSI systems.

**MOTION-TRIGGERED LIGHT**

A motion triggered light illuminates under the stage as soon as it detects your hand, to help you see when changing objectives.

**SHORTCUTS**

If you need to keep track of samples or procedures, just hit the shortcut buttons to film or photograph any stage of the process. There is a counter button and an on-screen stopwatch as well.

**SAFE**

Stage temperature control status indicator light and alarm monitors every second of the process. A log is kept of every alarm triggered.
“By far the best new feature is the warm air flow through the central plate – which means your dish can maintain the correct temperature throughout the procedure. The egg counter feature has also been a blessing in large cases.”

Sophie Bird
Guy’s and St Thomas’, UK
The Integra 3 is built at our high-tech factory in the South West of England. We have made thousands of micromanipulators since the early sixties, each one assembled under the diligent eyes of the designers who developed them. Our commitment to quality, durability and reliability has been there since day one. This is why our Integra has proven to be the micromanipulator of choice for ART clinics worldwide.
"An air warming system improves temperature stability during gamete and embryo micromanipulation procedures."\textsuperscript{1}

\textbf{Stacy Wheat}  
Cambridge IVF, UK

\textsuperscript{1}Wheat, S. 2013. Can temperature stability be improved during micromanipulation procedures by introducing a novel air warming system? Cambridge IVF, Cambridge - available on request

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COLOUR TOUCH SCREEN

3.5 inch touch screen display showing temperature, stopwatch and counter. The electronic height indicators track the vertical position of the toolholders

INTEGRATED

Large built-in mechanical XY stage plus temperature controllers with easy access buttons and touch screen

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**MICROSCOPE COMPATIBILITY**

- **Nikon**
  - TMD, Diaphot 200/300, TE200/300, TE2000, Ti
- **Leica**
  - DMIRB, DMI3000B/4000B/6000B, DM IL, DMi8
- **Olympus**
  - IMT2, IX50/70, IX51/71/81, IX53/73/83
- **Zeiss**
  - Axiovert 40/100/200, Axio Observer, Axio Vert.A1
The RI IMSI system allows morphological screening of sperm cells at very high magnification and in real time. Studies suggest that this can lead to higher pregnancy rates\textsuperscript{1,2,3}.
“The RI IMSI system with the RI Viewer software allows us to visualise individual sperm in sufficient detail to assess their heads for the presence or absence of nuclear vacuolation. The system has allowed us to offer another effective treatment option to our patients and we are very happy with the treatment results we have achieved from our IMSI treatment cycles to date.”

Stephen Harbottle, Cambridge IVF

CLINICAL IMSI

Speed, affordability and compatibility are important to you. So with this in mind RI has developed a software and camera package for Intracytoplasmic Morphologically-selected Sperm Injection (IMSI), widening the scope of procedures you can perform on your micromanipulator.

Marrying your microscope provider’s recommended objective and condenser combination and RI’s high-sensitivity camera, medical grade monitor and versatile imaging software, you can now achieve outstanding image quality for the screening of sperm cells. Teamed with RI’s Integra 3 micromanipulator you have the perfect tool to ensure the fast and efficient use of the technique.

The camera’s large sensor has high-sensitivity pixels for bright, high contrast images. The pixel count is a perfect match for the resolution of your optics, and allows smooth video at 15 frames per second.

RI IMSI is supplied with the easy to use RI Viewer software – the only application you need for ICSI and IMSI. Capture, record, annotate and measure, with intuitive zoom and pan on screen.

MICROSCOPE COMPATIBILITY

| Nikon      | TMD, TI, Diaphot 200/300, TE200/300, TE2000, |
| Leica     | DMRB, DM IL, DMI3000B/4000B/6000B, DMi8 |
| Olympus   | IMT2, IX50/70, IX51/71/81, IX53/73/83 |
| Zeiss     | Axio Observer, AxioVert.A1 |


Precise Sub-micron accuracy and unique computer controlled laser with guaranteed laser alignment

Rapid Faster than ever directional laser increases functionality and decreases procedure times

Curved Biopsy Mode Biopsy Mode allows accurate laser drilling along a drawn straight or curved line
**FASTER BIOPSIES**

The Saturn 5 Biopsy Mode helps you to significantly improve biopsy methods, potentially reducing procedure time, lowering the incidence of blastocyst collapse and eliminating the need to mechanically tear off cells. Using Biopsy Mode, you can draw a straight or curved line along the sample, select the number and size of holes, then simply “fire”. The laser will ablate exactly along the chosen path, meaning you no longer need to move the holding pipette at all. It is that easy.

**ALWAYS SPOT-ON**

As the Saturn 5 pilot laser travels down the same fibre optic path as the ablation laser, it guarantees consistent positioning. You can calibrate and verify hole size and firing position with sub-micron accuracy simply and quickly, leaving more time for your procedures.

**COMMITMENT TO EMBRYO SAFETY**

Multiple safety features ensure the Saturn laser is the safest laser on the market. To keep your embryos safe, features include the Exclusion Zone which can be set according to distance. By employing a higher laser power, the Saturn Laser applies less total energy to make a specified hole size, in comparison to lower power laser systems.

**IMAGE GALLERY**

RI Viewer Image Gallery provides centralised access to all images and videos taken of your samples. Files can be assigned to patient folders with ease, notes added or images printed. It simplifies your workflow and keeps you organised.

**INTUITIVE SOFTWARE AS STANDARD**

In addition to its intuitive use and safety assurances, the new Saturn 5 features RI Viewer software. The software offers uncluttered full screen imaging from the microscope, digital magnification and a modern, clean user interface. RI Viewer also offers a recording function, line measurement tools which are visible on-screen and are printable, plus a built-in laser simulator for training and demonstration purposes. RI Viewer supports a range of languages.

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1, 2, 3 Please see page 15 for references.
“The moveable Saturn Laser means I can ablate the zona exactly where I want to, without having to move the embryo.”

Samantha Knight
SPIRE London Fertility Clinic, UK
APPLICATIONS\textsuperscript{4,5}

For blastocyst/trophectoderm biopsy, the Saturn 5 Active is unparalleled in its ease of use. The directional laser allows you to make multiple ablations across the trophectoderm cells without needing to move the blastocyst. This offers superb accuracy, safety and incredible speed.

For blastomere biopsy, polar body biopsy and blastocyst collapsing (for vitrification), the Saturn 5 Active Directional Laser allows the embryo to stay in the desired position and focus, so that ablations can be made wherever required without additional manipulation. Our Biopsy Mode also allows safe drilling along a predetermined line.

For assisted hatching, the moveable laser means accurate ablations can be made without the need to hold the embryo, avoiding additional consumable costs.

You will find these procedures can be performed quickly and accurately using the Saturn 5 Active, unlike fixed lasers.

“The Saturn 5 Laser has really improved and sped up my procedures. The Saturn 5 Active Laser is very impressive as it gives you a lot of freedom in how you do the procedures, the software is very easy to use, very comprehensive and the biopsy mode helps me process the cells for PGD.”

Dr Melihan Bechir
Fertilia MedLife, Romania

\textsuperscript{1} Lloyd S, Doshi A, Harper J, Application note. A new method of biopsying TE cells using the latest Saturn 5 Active Laser System offers several potential ways to improve your procedures - Available on request.


\textsuperscript{3} RWhite Paper. A comparison of different power levels used by laser systems in the IVF laboratory – Available upon request.

\textsuperscript{4} The applicability of procedures is dependent on the regulations of the country into which the device is sold.

\textsuperscript{5} In the USA, FDA cleared for clinical use for embryo biopsy, trophectoderm biopsy, blastocyst collapsing and Laser Assisted Hatching (LAH).
CLASS I LASER
Saturn 5 Laser Systems are Class I laser products as defined by international laser safety standards. They are CE marked and FDA cleared.

ESSENTIAL BIOPSY TOOL
The Saturn 5 Biopsy Mode is quickly proving to be an essential tool in the practise of biopsying across the world.

TOTAL CONTROL
Preset options allow Lab Managers to predefine their preferred laser setting for each procedure helping to speed up and standardize processes.

MICROSCOPE COMPATIBILITY

- **Nikon**
  - TMD, Ti,
  - Diaphot 200/300,
  - TE200/300, TE2000,

- **Leica**
  - DMI, DM IL,
  - DMI3000B/4000B/6000B,
  - DMi8

- **Olympus**
  - IMT2, IX50/70,
  - IX51/71/81, IX53/73/83

- **Zeiss**
  - Axiovert 40/100/200,
  - Axio Observer
“Since I started using RI Witness in my laboratory the embryologists sleep better and so do the patients.”

Jean-Claude Jacquet, Medical Biologist in Reproduction
Oriade PMA Grenoble, Rhône Alpes, France
RI Witness has been created to minimize errors that may occur during IVF treatment cycles.

It is an electronic witnessing system that monitors all laboratory workstations twenty-four-seven where samples are moved from one dish or tube to another. This system is automatic, so it does not require additional steps by embryologists to identify samples, which are necessary with double witnessing or other electronic witnessing systems.

RI Witness frees up your time, energy and expertise by automatically tracking, monitoring and recording across all your work areas, creating a comprehensive log of all that happens to every patient’s sample when outside of the incubator, including procedure duration. This fail-safe process fills everyone with total confidence.

RI Witness streamlines your working practice overnight and improves the day-to-day efficiency of a laboratory.

“The benefit of having RI Witness is the added security and peace of mind for patients and staff.”

Nicola Townsend, Laboratory Manager, Herts & Essex Fertility Centre, UK

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1 Maggiulli R, Ubaldi F, Rienzi L, 2012, Implementing an electronic witnessing system into a busy IVF clinic – one clinic’s experience
2 Thornhill A, Brunetti X & Bird S, 2013, Measuring human error in the IVF laboratory using an electronic witnessing system, 17th World Congress
4 Thornhill A, Brunetti X, & Bird S, 2013, Measuring human error in the IVF laboratory using an electronic witnessing system, 17th World Congress
Clinic visits can be arranged to see the system in action and ask clinic staff questions

WHO IS IT FOR?

IVF CLINICS

Small/Medium Clinics
Provides an additional pair of eyes in smaller laboratories with low staff numbers

Large Clinic Groups
Standardizes protocols across multiple laboratories, buildings and locations

High Volume Clinics
Mitigates risk of human error in laboratories with high workloads

Private or Public Clinics
Supports best practice for human IVF in public hospitals as well as private clinics

IVF CLINIC STAFF

Laboratory Managers/Directors
Improves working efficiency, assists with management and staffing, training and auditing

Embryologists
Offers increased security, less disruption and reduces stress

Quality Control Managers
A great tool for auditing, reporting and standardization purposes

Patients
Offers personal involvement, reassurance and patient-centered care.
Provides peace of mind.
WHY DO I NEED RI WITNESS?

- **Mitigates Risk:** Taking better precautions averts the chance of human error associated with repetitive tasks and misperception\(^5,6\)
- **Error Prevention:** Alerts embryologists when incompatible samples are placed in the same workstation
- **Sample Safety:** Accelerates the speed of witnessing which reduces the time an embryo is out of the incubator
- **Less Disruption:** Fewer workflow interruptions for the embryologist team due to double witnessing requests
- **Constant Monitoring:** Who did what procedure, where, when and to which patient’s sample is automatically recorded
- **Bespoke Installation:** The system fits around your clinic’s protocols
- **Safe to Use:** RFID technology has been MEA tested for safety and used clinically for over 9 years. CE marked as a medical device (pending US FDA market clearance)
- **Easy to Use:** Makes laboratory work easier not more difficult or complex
- **Time Saving:** Helps manage staff training and performance, analyze laboratory statistics, simplify audits, cut overtime costs
- **Liberating:** Does the work of many people, freeing up staff members to carry out more procedures and increase overall laboratory efficiency
- **Quality Management Tool:** Ensures a consistent adoption of protocols and monitors staff performance
- **Less Stress:** Our system training program creates a competent, efficient, reassured and confident team
- **Competitive Advantage:** Offers a more secure and patient orientated service

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“RI Witness has improved efficiency by streamlining our working practice - laboratory procedures are performed at the optimum time with a real-time witness. The ease of operation is great and the system has proved to be a versatile audit tool.”

Sophie Jewitt, Senior Clinical Embryologist Gateshead Fertility Unit, England

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\(^5\) Toft B, 2004, Independent review of the circumstances surrounding four adverse events that occurred in the Reproductive Medicine Units at The Leeds Teaching Hospitals NHS Trust, West Yorkshire

RI Witness RFID tags ensure you know exactly who did what, where and when to patient samples.

### HOW DOES IT WORK?

1. **CARDS ASSIGNED**
   - Each couple is assigned an ID card with their unique personal code.

2. **TAGS ASSIGNED**
   - ID tags containing this unique personal code are fixed to all plasticware containing patient samples.

3. **CYCLE RECORDED**
   - Every work area in the lab detects wireless signals from these ID tags, they are identified, tracked and recorded at each step of the IVF process.

4. **TRANSFER**
   - The female patient’s ID card is automatically checked against the embryo dish prior to transfer.

5. **ERROR PREVENTION**
   - In the unlikely event that samples are mismatched, the system stops the process preventing any potential errors.

6. **INSEMINATION**
   - RI Witness confirms the identity of samples and allows the embryologists to proceed to insemination.
SECURE

RI Witness uses RFID (Radio Frequency Identification) technology to track and record patient samples at each step of the ART process so it works as a safeguard and a reassurance for both you and your patients. At the same time, the system captures information regarding the cycle progress and operator actions, sending the data to a common server for patient records or collating it to provide a real-time record of what is happening in the laboratory.

SAFE

Using RFID technology means every ID is totally unique and cannot be misread. This makes the RI Witness system a reliable improvement to manual witnessing as well as a solution for reducing staff distractions.

Over 100 clinics across the globe put their trust in RI Witness.

RFID technology has been MEA tested and used for over nine years with over half a million embryos safely secured using the system. It is CE marked as a medical device and approved by the HFEA (pending US FDA market clearance).

HOW DOES IT WORK?

Dr Albert Obradors
Clinica Eugín, Barcelona, Spain

“... We have been using RI Witness for over three years now and no negative effect on any of our rates has been detected. The RI Witness system is an indispensable part of our laboratory structure so I cannot imagine not having it.”

CONTROL

Helps you manage and monitor risks more effectively

SECURE

Locks the patient’s identity to the sperm, eggs and embryos at every stage of the treatment, so they are continuously monitored
EASY TO USE

RI Witness is surprisingly simple to use despite the many functions it can perform. It is often integrated with patient databases subject to clinic database manager/developer involvement.

Following initial training given upon installation, laboratory managers can add or remove steps or protocols to reflect changing working practices taking place in the laboratory. Our service team are also on hand to offer support.

If you want to include a discard step to ensure viable embryos are not thrown away – you can do this. If you need to add further key witness points for donor samples or biopsy – you can go right ahead. If your protocols change you can simply update them in the RI Witness system.

ADAPTABLE

Bespoke to your clinic, RI Witness is compatible with any laboratory set-up so there is no need to change your protocols.

“RI Witness was very easy to adopt and we have been working with it for years now.”

Pierre -Yves Prima, Polyclinique de l’Atlantique, France
“As the laboratory manager, I feel a lot more secure using the RI Witness system. It doesn’t increase our workload, and it’s very convenient.”

Fang Cong
IVF Centre of 6th Affiliate Hospital
Sun Yet-sen University, China

REASSURING

RI Witness takes away any uncertainty, giving you increased confidence in all that you do. It protects both you and your laboratory.

If at any time samples from incompatible patients are introduced into the same work area, RI Witness warns laboratory personnel both visually and audibly. Monitoring is constant, so an identity check can never be overlooked, and it requires no additional steps to be taken by the embryologist - unlike other systems. It will even sound a warning if tagged containers are left behind on a workstation.

PATIENT CENTRED

We understand your patients’ experience is fundamental during treatment. Having RI Witness gives patients the opportunity to take part in the control of their cycle. ID cards are used to verify that the identity of the patient and embryo to be transferred match, and visual confirmation is streamed to a screen in the transfer room. It provides extra reassurance for patients, all of which help support better patient well-being.7,8

7 ESHRE Psychology and Counselling Guideline, March 2015
8 Rienzi L, 2015 Successful clinic marketing – patient concerns and our duty of care to our patients, Slideshare
Numerous patients have informed us that they feel better knowing that this safeguard, RI Witness, is in place.

Laboratory Director, Overlake Reproductive Health, USA

“I wouldn’t want to work in a centre which doesn’t use this system in the future. Safety of the patient is paramount to our working practice as embryologists and extra security can only be of benefit in reassuring them that we are taking every step to offer the very best care possible.”

Lynne Glover, Deputy Laboratory Manager
Herts and Essex Fertility Centre, UK

FEATURES

CRYPRESERVATION

The RI Witness Cryo feature allows patient samples to be tracked as they enter and leave cryo storage, creating a complete record of a patient’s cycle and an extra level of security. The Cryo feature moves sample records from the RI Witness RFID system to cryo-suitable barcode identification labels. Durable, laboratory-proven Brady labels to identify the vials or vitrification straws are used. On thawing/warming, the barcode information is linked automatically with the embryo thaw dish.
**HEATED READERS**

Our latest super slim readers are available with or without heated plates. The heat keeps samples at a constant 37°C whilst they are out of the incubator, ensuring they are maintained at the appropriate temperature throughout manipulation. If room temperature is needed temporarily on a heated reader, an RI Ambiplate is used to provide a working ambient temperature surface.

**IMAGING**

The RI Witness Imaging feature enables you to capture images and videos from every microscope in the laboratory, at every stage of the patient cycle. All the latest information and images for each patient’s cycle can be accessed immediately from any networked PC.

**PAPERLESS DATA CAPTURE**

Most laboratories record cycle information on paper forms which then need to be separately transcribed into a computer database. The RI Witness Data Capture feature enables you and your colleagues to enter data into patient records using small touch screen displays or a keyboard and mouse interface installed at your work areas. By inputting directly, transcription errors are eliminated and multiple data handling is avoided. Data can be accessed and analyzed immediately from any RI Manager licensed PC on the network.
MATERIALS TRACEABILITY

The Traceability feature can help your clinic keep a full record of consumables used in the laboratory, often a requirement of regulatory authorities. Tailored to your laboratory protocols, this feature logs which products are used for each cycle type. Traceability records can be sorted and filtered in various ways to cross-reference patient cycles and material batches.

QUALITY MANAGEMENT

Whenever a procedure is carried out in a laboratory, using the RI Witness system, a comprehensive record of the procedure is automatically captured; which includes, a log of the person who carried out the procedure, when and where it was recorded, the plasticware that was used, and how long the procedure took.

This allows you to see where and how each staff member’s time is being spent and to analyse the time taken to complete procedures, potentially highlighting training needs. It also enables you to monitor workstation utilization. It can show if procedures are taking longer at one workstation compared with another, possibly indicating that equipment requires upgrading or replacing. If certain procedures are being carried out more often at certain locations then workflows could be adjusted. The procedure data can be explored in detail or summarized into pie or bar charts.

Images and videos can be taken while procedures are carried out under the microscope for inclusion in patient records or for review and training.

The RI Witness system also records the total work time taken to complete each cycle and even the last location of each assigned piece of plasticware. All of this data gives a detailed overview of the procedures taking place, allowing you to make informed decisions about laboratory work improvements.

LABORATORY OVERVIEW

To aid smooth workflow, some laboratories install a Cycles Overview Display to show the current active cycles in the lab. For each cycle, the last procedure and current status for the day is shown, for example - in progress, finished, not started. Displayed on a screen fitted to the laboratory wall and on the laboratory manager’s PC, the entire team gain an overview of the active cycles in the lab and how the day’s work is progressing.

EASY ANALYTICS

Clear reports can help identify training needs or time saving workflow changes.
We understand that installing a new system sounds complicated and time consuming, this is simply not the case. Whether your laboratory has just a few workstations or is large and busy, we work around laboratory working hours to ensure your RI Witness installation causes minimal disruption.

Using a simple modular installation system, workstations are easy to construct, and can be isolated so the rest of your laboratory is not affected.

A good Facility Review is key to the success and timeliness of your RI Witness system installation. It forms the basic plan that outlines your clinic’s needs.

The review takes roughly just one afternoon to complete with one of our sales or service team members. It involves a walk round your laboratory to record which procedures are completed at each workstation so we can tailor the system to fit your exact needs, mapping out locations for readers and screens for optimum use by your staff.

We can fit our super slim readers into all workstations from major suppliers including K-Systems and ORIGIO and it is often possible to retrofit readers into existing workstations if required. We also work closely with clinics and their suppliers on an individual basis to ensure smooth integration of patient databases with the RI Witness system.

“RI’s service provision is head and shoulders above other companies I have experienced and it has been truly enjoyable, having the RI team here to help us. During installation the team were friendly, helpful, patient and tidy.

Their phone and email support team are always helpful, willing to assist, and nothing ever appears to be too much trouble. I cannot stress enough how much things like this help and really do make a difference.”

Victoria Thomas, Deputy Laboratory Manager
Wales Fertility Unit, Neath, UK

Our experienced installation team understand your time constraints
“The integration of RI Witness into our daily routine was fast and simple and allowed for an improvement in system usage after a short period of time.”

Dr Roberta Maggiulli, Biologist Laboratory Coordinator, Clinica Genera, Italy
TRAINING PROGRAM

To help you get the most from your RI Witness system, and ensure you are using it correctly, a bespoke training program is specially tailored to suit your system configuration and staff members’ needs.

Various certificated training options are available for new and existing users.

New Users

- **Administrators and End Users (embryologists/clinicians)** - System operation training
- **Laboratory Managers** - System operation training, configuration set ups, analytics and reports

Existing Users

- **Refresher Package Training** - Configuring new/updated protocols, audit reports, training for new staff or retraining current staff

EASY TO ARRANGE

Personalized training ensures staff confidence and a smooth system transition.
SERVICE PLANS

In today’s busy laboratory, downtime due to equipment failure is unacceptable therefore a Service Plan can be provided with each RI Witness system, offering fast and reliable support.

Located in the UK and at partner locations across the globe you can rely on our team of RI Witness dedicated and experienced Service Engineers who are factory trained professionals.

RI Witness servicing is bespoke to the product and includes:

- Unlimited telephone support during office hours Monday to Friday, 8.30am-4.30pm GMT (3.30pm on Fridays)
- Free annual software updates as part of your contract
- Preventative maintenance and service contracts available on request
- Fully stocked spare parts
- Product support guides and films

“I received refresher training which involved altering my Witness Point Diagram and Home Screen. Martin was very patient, and worked through the different sections at a pace that suited me. He was able to answer all my questions and gave me exactly the help and support I needed, which was great.”

Ellen Drew, Clinical Embryologist
Ninewells Hospital, Dundee, UK

“RI offer a high standard of support, a quality after sales service and are constantly innovating to improve their product range further. I would not hesitate to work with RI again.”

Stephen Harbottle, Lead Embryologist
Cambridge IVF, UK

EXCELLENT SERVICE

Friendly, efficient service team
“I can confidently use the EZ-Range for all embryological handling procedures and rest assured that the eggs/embryos are secure during movement.”

Julia Paget, Complete Fertility, Southampton, UK
EZ-RANGE

Premium Denudation and Handling Devices

- **PREMIUM QUALITY**: RI EZ-Range of denudation and handling devices are rigorously checked for quality, ensuring consistent geometries, close tolerances and smooth edges.

- **FLEXIBLE**: Made from flexible and shatter-proof medical-grade plastic, which does not scratch Petri dishes as fragile glass pipettes are prone to do.

- **SAFE**: Finished product MEA tested, Finished product LAL tested. Sterilised by an ISO 11137 series approved gamma irradiation.
EZ-TIP®

DENUDATION AND HANDLING
PLASTIC PIPETTE

EZ-Tip is a high quality, medical grade, plastic tip for oocyte denudation and handling of gametes, embryos and biopsied cells.

Our close-tolerance plastic tips are flexible, with smooth edges and consistent geometries. The EZ-Tip can be easily extracted from its packaging and loaded into the pipettor. The 0.9mm outer diameter fits the EZ-Grip and is compatible with all popular denudation and handling pipettors.

EZ-TIP IS SOLD IN 3 OPTIONS:

Vial of 20 x 5: Supplied in a glass vial of 20 pipettes, 5 vials per box. Three year shelf life.

Vial of 20: A single glass vial of 20 pipettes. Three year shelf life.

Singles: Supplied as a box of 20 individually packed pipettes. Five year shelf life.

“We have found the EZ-Tip to be comfortable and easy to use whilst providing the fine control required for the safe handling of oocytes and embryos.”

Marta Jansa Perez,
IVF Hammersmith, UK

HIGH QUALITY
Consistent geometries and smooth edges

COMPATIBLE
Fits with EZ-Grip and all popular denudation and transfer pipettors

FLEXIBLE
Unbreakable medical grade plastic tip that will not scratch Petri dishes
<table>
<thead>
<tr>
<th>NOMINAL SIZE</th>
<th>USE</th>
<th>COLOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>75µm</td>
<td>Handling</td>
<td>Purple</td>
</tr>
<tr>
<td>125µm</td>
<td>Denudation</td>
<td>Blue</td>
</tr>
<tr>
<td>135µm</td>
<td>Denudation</td>
<td>Yellow</td>
</tr>
<tr>
<td>145µm</td>
<td>Denudation</td>
<td>White</td>
</tr>
<tr>
<td>155µm</td>
<td>Denudation</td>
<td>Green</td>
</tr>
<tr>
<td>170µm</td>
<td>Denudation</td>
<td>Red</td>
</tr>
<tr>
<td>200µm</td>
<td>Handling</td>
<td>Orange</td>
</tr>
<tr>
<td>250µm</td>
<td>Handling</td>
<td>Aqua</td>
</tr>
<tr>
<td>290µm</td>
<td>Handling</td>
<td>Black</td>
</tr>
<tr>
<td>600µm</td>
<td>Handling</td>
<td>Brown</td>
</tr>
</tbody>
</table>
DENUDATION AND HANDLING
PIPETTOR

Immediately accessible and easy to adopt, the EZ-Grip allows you to quickly and confidently manipulate with a very high degree of precision. The straightforward ergonomic design is comfortable to use for long periods. Due to its smooth streamlined body, EZ-Grip can be rapidly and effectively disinfected or autoclaved. This device was developed alongside professionals in ART, specifically for clinical applications.

The unique Pipette Size Indicator on the EZ-Grip may be used as a reminder of the size of pipette being used or left at a blank setting, if preferred. The EZ-Grip fits with the EZ-Tip and all popular plastic denudation and handling pipettes (Ø0.9mm).

The EZ-Grip stands apart from competitor pipettors due to its modern, considered design supported by RI’s reputation for innovation, quality of manufacture and customer service.

The EZ-Grip can be supplied with or without the EZ-Grip Comfort Rest.
**Sample Delivery** 0.2µl-3µl

**Pipette Outer Diameter** 0.9mm

**Function** Actuator to use with EZ-Tip or plastic pipette tips with a 0.9mm outer diameter

**Blow Out Utility** Yes

**Overall Dimensions** 127mm length x 18mm diameter at widest point

**Material** Aluminium and Stainless Steel

**Weight** 36g

**Sterilisation Method** Autoclavable

---

“The RI EZ-Grip and EZ-Tip are simple to use and very effective. The design gives reassurance that the tip can’t drop out and the plunger provides a very smooth and fluid motion.”

Julia Paget
Complete Fertility, UK

---

**PRECISE**
Adjustable aspiration volumes for precise control

**PRACTICAL & DURABLE**
Autoclavable, ergonomic design that requires minimal maintenance

**VERSATILE**
Fits with EZ-Tip and all popular plastic denudation and handling pipettes (Ø0.9mm)
EZ-Squeeze™

BULB PIPETTE DENUDATION AND HANDLING SYSTEM

EZ-Squeeze is a pipette and bulb system for oocyte denudation or gamete and embryo handling, designed for use with a handle accessory.

The pre-assembled EZ-Squeeze pipette is fitted with an aspiration bulb, creating a reliable seal, which is not always guaranteed with customer assembled systems. This time-saving combined unit enables a faster set-up and the flexible, shatter-proof medical grade plastic pipette does not scratch Petri dishes, as fragile glass pipettes are prone to do.

EZ-Squeeze pipettes are supplied sterile in individually sealed packs with clear, large print and colour coded size information. The autoclavable EZ-Squeeze handle, supplied separately, is designed to offer precision, ease of handling and a comfortable working position. The shelf life of EZ-Squeeze is five years.

“EZ-Squeeze tips allow precise control and secure handling during all lab procedures. We have found the RI supply chain to work flawlessly, from order placement to after sales service - even at very short notice.”

Paul Edward Wilson, Head of Embryology and Andrology, Bristol Centre for Reproductive Medicine, UK

**PRE-ASSEMBLED**
Medical grade plastic pipette fitted with a flexible bulb for a reliable seal and simpler set-up

**SEALED**
Individually packed for sterility and in multipack for convenience and economy

**HIGH QUALITY**
Extensive quality control practices ensure consistent geometries and smooth edges for gentle sample handling
<table>
<thead>
<tr>
<th>NOMINAL SIZE</th>
<th>USE</th>
<th>COLOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>131µm</td>
<td>Denudation</td>
<td>Blue</td>
</tr>
<tr>
<td>135µm</td>
<td>Denudation</td>
<td>Yellow</td>
</tr>
<tr>
<td>145µm</td>
<td>Denudation</td>
<td>White</td>
</tr>
<tr>
<td>145µm Long</td>
<td>Handling in Tubes</td>
<td>White</td>
</tr>
<tr>
<td>155µm</td>
<td>Denudation</td>
<td>Green</td>
</tr>
<tr>
<td>170µm</td>
<td>Denudation</td>
<td>Red</td>
</tr>
<tr>
<td>200µm</td>
<td>Handling</td>
<td>Orange</td>
</tr>
<tr>
<td>290µm</td>
<td>Handling</td>
<td>Black</td>
</tr>
<tr>
<td>600µm</td>
<td>Handling</td>
<td>Brown</td>
</tr>
<tr>
<td>NOMINAL SIZE</td>
<td>USE</td>
<td>COLOUR</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------</td>
<td>--------</td>
</tr>
<tr>
<td>131µm</td>
<td>Denudation</td>
<td>Blue</td>
</tr>
<tr>
<td>135µm</td>
<td>Denudation</td>
<td>Yellow</td>
</tr>
<tr>
<td>145µm</td>
<td>Denudation</td>
<td>White</td>
</tr>
<tr>
<td>145µm Long</td>
<td>Handling in Tubes</td>
<td>White</td>
</tr>
<tr>
<td>155µm</td>
<td>Denudation</td>
<td>Green</td>
</tr>
<tr>
<td>170µm</td>
<td>Denudation</td>
<td>Red</td>
</tr>
<tr>
<td>200µm</td>
<td>Handling</td>
<td>Orange</td>
</tr>
<tr>
<td>290µm</td>
<td>Handling</td>
<td>Black</td>
</tr>
<tr>
<td>600µm</td>
<td>Handling</td>
<td>Brown</td>
</tr>
</tbody>
</table>
SINGLE USE DENUDATION AND HANDLING SYSTEM

The EZ-Strip is a unique registered design, developed for maintaining the most exacting laboratory sterility standards. The EZ-Strip minimises any risk of cross contamination through the use of a complete, single-use, sterile unit. Systems using reusable devices or handles cannot make the same guarantees.

The EZ-Strip pipette is made of medical grade plastic which will flex and not damage the Petri dish.

Available in nine sizes, including a long version which is ideal for the handling of gametes in tubes. The shelf life of EZ-Strip is three years.

“I began using EZ-Strip when it was first introduced to the market and I am really happy with its quality and performance. It is definitely our preferred choice for denudation and transfer.”

Hasmukh Joshi,
Senior Embryologist and Laboratory Manager,
Homerton Fertility Centre, UK
The finished consumables are tested by an independent laboratory using a 1-cell stage mouse embryo toxicity test. Our pass criteria is ≥ 80% blastocyst after 120h.

Each sterility batch of finished product is tested for bacterial endotoxins. Our pass criteria is < 20Eu per device.

Finished injection pipettes undergo and pass a sperm motility bio assay. To pass the HSSA test, the motility of sperm must be ≥ 70% after 24 hours of sample preparation.

1 Refer to Sterility and Biocompatibility Testing on the website www.research-instruments.com/compliance/
2 Applicable to injection pipettes only.
“I appreciate the sharpness of the injection pipette and the comfort of the holding pipette during microinjection of oocytes.”

Maria Beatrice Dal Canto, Centro di Medicina Riproduzione – BioGenesi, Italy
RI Pipettes are available in a range of configuration options to suit procedures, user preference and micromanipulator set-up. Configurable options include inner diameter (ID), outer diameter (OD), angle of bend and length of toe (tip to bend).

Please visit www.research-instruments.com/pipettecodes to easily select the correct pipette part number for your use.

PRACTICAL PACKAGING
Our micropipettes are packed into a high quality Twista-Pak. The Twista-Pak provides protection from tip damage and operates like a lipstick, where the simple twist action allows easy access and ensures neither end of the pipette is touched during removal.

The RI micropipettes have a shelf life of three years as standard.

INJECTION PIPETTES
RI ICSI-Plus Injection Pipettes can be used to immobilise, then inject spermatozoa into the cytoplasm of an oocyte during ICSI and Intracytoplasmic Morphologically-selected Sperm Injection (IMSI).

Our ICSI-Plus Injection Pipettes are designed for the smoothest control of sperm injection and cytoplasm suction, and to minimise damage to the oocyte. Multiple sperm can be loaded and injected.

Injection pipettes from RI are available with a spike (SI) or without a spike (NI). For human ART, the larger 8µm ID injection pipette, is ideal for collecting sperm from a testicular tissue sample prior to ICSI.

HOLDING PIPETTES
These pipettes are designed for anchoring the oocyte or embryo during ICSI or other micromanipulation procedures. A smooth fire polished tip cradles the cells gently and securely.

Applicable indications for use are subject to the regulations of the country into which the device is sold. Availability of a device for clinical use is dependent on the regulatory approval status of that device within the country the device is intended to be sold into.

RI PIPETTES

3 Not all configurations are held in stock - please check with your distributor for information on stock or lead times.
4 1000μm toe length is only available in thin glass.

SPIKED INJECTION
(SI)
ID 4/5/8µm
Toe Length (μm): 750, 1000

NON-SPIKED INJECTION
(NI)
ID 5µm
Toe Length (μm): 750, 1000

HOLDING
(IH)
ID 15µm
Toe Length (μm): 750

LARGE HOLDING
(LH)
ID 25/32µm
Toe Length (μm): 750
BIOPSY PIPETTES

RI biopsy pipettes (B) are used to remove tissue from embryos or oocytes for Pre-implantation Genetic Diagnosis (PGD). RI offer these pipettes in three profiles - flat, non-spiked or spiked.

Available in a range of ID sizes suitable for a variety of biopsies including polar body (usually 14µm ID), blastomere and trophectoderm biopsies (usually between 20-40µm ID). Each biopsy pipette is fire polished to minimise damage to the cell membrane.

MECHANICAL DISSECTION AND ASSISTED HATCHING PIPETTES

RI mechanical dissection pipettes (MD) are used to mechanically cut an opening in the zona pellucida of an oocyte or embryo to enable assisted hatching and biopsy. The pipette is designed with a sharp tip or a strong taper section for easy control and precise manipulation.

RI assisted hatching pipettes (AH) are used to direct acidic solution (acid tyrodes) onto the zona pellucida to thin the zona or create a hole to enable the embryo to hatch.
Fertisafe™

EMBRYO-SAFE DISINFECTANT SPRAY

Fertisafe has become the disinfectant of choice for ART labs and theatres that want to deep clean and disinfect work areas and lab equipment, without exposing samples to harmful Volatile Organic Compounds (VOCs).

Fertisafe will effectively eliminate the bacteria and viruses found in a laboratory in seconds, and spores and fungi in minutes.

Fertisafe contains a unique blend of chlorine, hydrogen and oxygen compounds (including chlorine dioxide, hypochlorites, ozone and free oxygen radical).

It has a low chemical load and does not react with the nitrogen products in biomasses, but is very potent at the molecular level against microbial structures.

Fertisafe is proven to be both a safe and powerful disinfectant. As part of the MEA batch testing, embryos are cultured in media supplemented with 5% Fertisafe.

Each batch is also tested for efficacy against *Bacillus subtilis* variant niger and achieves a 6-log reduction in five minutes.

---

**EMBRYO-SAFE**

MEA tested, alcohol, VOC and Quaternary Ammonium (DDAC) free

**EFFECTIVE**

Bactericidal and virucidal in seconds and fungicidal and sporicidal in minutes

**GENTLE**

Biodegradable, eco-friendly solution for disinfection
“I have been routinely using Fertisafe products in the IVF lab and find them to be VOC free, non-toxic to mouse gametes and pre-implantation embryos and extremely effective.”

Graham Coull,
Sims IVF, Dublin, Ireland
“RI MSC is simple to use and requires no centrifugation step, therefore operator time is reduced to < 5 mins. It is ideal for the efficient preparation of high quality semen and outperformed direct swim up by, on average, 46%.”

**Erica Foster,**
Complete Fertility Centre, UK
SPERM MIGRATION SEDIMENTATION CHAMBER

The RI MSC (Migration Sedimentation Chamber) facilitates the separation of A-motile sperm from immotile sperm and debris.

For a normal sperm sample, centrifugation is a time-consuming and potentially damaging method of sperm selection. The simplicity of the migration sedimentation technique, using standard culture media and unprepared sperm, allows the operator to work very quickly. Moreover, using the sperm’s own motility for selection is a very practical solution as the resulting sample will be of good morphological quality with minimal debris.

Each RI MSC is sealed in a tamper-proof medical pouch, ensuring its sterility until use. The shelf life is three years and they are available to order in quantities of 20.

HOW IT WORKS

The RI MSC is a small, cylindrical, plastic moulded vessel housing a central well with a surrounding gallery or collar, in which the progressive spermatozoa ‘jump over’ the edge of the central tube. They sediment at the bottom of the central conical tube from where they can be collected by aspiration. The cylinder is 74mm in height with a top OD of 16.5mm and fluid capacity of 6 ml (approximately). It is supplied sterile and for single use.

EFFECTIVE

Facilitates the selection of a high percentage of vigorously A-motile spermatozoa

EFFICIENT AND GENTLE

Reduces operator time compared to centrifugation. No risk of sperm tail damage

SIMPLE AND SAFE

Uses standard culture medium. Each RI MSC is sealed in a tamper proof medical pouch. HSSA tested
“Ensuring we provide and maintain optimal environmental conditions for our patients’ embryos whilst ex-vivo is one of the most fundamentally essential tasks of a successful lab.”

Ronny Janssens  
Centre for Reproductive Medicine, UZB, Brussels, Belgium

REGULATORY COMPLIANCE  
Each device complies with the EMC Directive 2004/108/EC and is CE marked
Our monitors offer exacting measurements with streamlined maintenance and calibration processes.

PORTABLE
Every monitor from RI can be operated on battery power for convenience.

SAFE
By monitoring important parameters independently, the best safety standards can be maintained.

ACCURATE

ENVIRONMENTAL MONITORS
Optimising the Quality of your Laboratory Working Environment
Smaller, lighter and with an improved probe, the pH Meter 3 allows you to measure media in real time from inside any popular incubator, including benchtop models. The redesigned user interface guides you quickly through the calibration process.

The pH Meter 3 allows you to see the pH of a media sample during culture to better inform laboratory protocols and optimise conditions. It is suitable for various laboratory surveys and is compatible with standard media equilibration practices.

The amount of data storage has been increased to 2GB in which can be transferred to your PC for analysis using our dedicated software, which includes adaptable graphs to display the pH and temperature over time. Details can also be archived, reported to other software programs and printed for laboratory records.

<table>
<thead>
<tr>
<th>pH Accuracy</th>
<th>±0.02pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH Calibration</td>
<td>2-point at room temperature, followed by 1-point at 37°C</td>
</tr>
<tr>
<td>Calibration</td>
<td>RI supplied buffers with pH 7 and 10</td>
</tr>
<tr>
<td>Temperature Accuracy</td>
<td>±0.5°C / 0.9°F</td>
</tr>
<tr>
<td>Protection Rating</td>
<td>IP65 (dust proof, water resistant)</td>
</tr>
<tr>
<td>Operation Time on Battery</td>
<td>8 hours typical with display on and 26 hours with display off</td>
</tr>
<tr>
<td>Data-logging</td>
<td>2GB internal memory</td>
</tr>
<tr>
<td>Data Export</td>
<td>Data export to PC with dedicated software provided</td>
</tr>
<tr>
<td>Dimensions</td>
<td>8cm x 16cm x 3.6cm</td>
</tr>
</tbody>
</table>

ACCURATE
New digital pH Meter readings with excellent calibration response and repeatability

UNIQUE
IVF culture dish design and improved robust probe

COMPATIBLE
Suitable for use with all popular incubators including benchtop versions
Building on the success and popularity of our pH Meter, RI now offers a new compact version.
“I consider this an essential piece of kit for the correct function of our lab and quality system.”

Sue Pickering
NHS Lothian, Edinburgh, Scotland
Consistently good temperature control is one of the best ways to optimise results in the ART laboratory.

**ACCURATE TEMPERATURE MEASUREMENT**

Laboratories use the IVF Thermometer to verify that heated equipment which comes into contact with live samples is performing as required.

The specifically designed microprobe allows you to accurately measure the temperature of heated stages and inside media droplets, incubators and refrigerators.

The probe can be held in place or fitted to a holder for hands-free measurement. The probe is also insulated against heat from the user for truly accurate measurements.

The optional cryo-probe has been tested extensively in liquid nitrogen and functions in temperatures down to -200°C.

<table>
<thead>
<tr>
<th>Accuracy</th>
<th>UKAS-certified offset. Measurement at calibration temperatures repeatable to ±0.2°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certification Points</td>
<td>5°C (41°F)</td>
</tr>
<tr>
<td></td>
<td>37°C (98.6°F)</td>
</tr>
<tr>
<td></td>
<td>45°C (113°F)</td>
</tr>
<tr>
<td>Operation Time on Battery</td>
<td>500 hours typical</td>
</tr>
<tr>
<td>Dimensions</td>
<td>15.5cm x 6.7cm x 4.0cm</td>
</tr>
<tr>
<td>Weight (including batteries)</td>
<td>250g</td>
</tr>
</tbody>
</table>
VOC LEVEL MONITOR

The RI VOC Meter is capable of detecting contamination at a 0.1 parts per million (ppm) level which is below an established threshold of embryo toxicity\(^1\). Parts per billion model also available.

Designed as a safeguard, the unit can be wall-mounted and VOC levels logged at desired intervals. The concentration of VOCs present is displayed on the screen. If a higher than recommended concentration of VOCs is detected, an audible alarm will sound.

Test results stored in the RI VOC Meter can be easily downloaded to a personal computer for analysis and printing, the software provided users can sort and view results with ease.

The VOC Meter is available with or without data-logging.


<table>
<thead>
<tr>
<th>Sensor</th>
<th>Data-logging (yellow model)</th>
<th>Non data-logging (green model)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Photo-ionisation detector (PID) 0 to 15,000 ppm</td>
<td>Photo-ionisation detector (PID) 0 to 10,000 ppm</td>
</tr>
<tr>
<td>Response Time</td>
<td>&lt; 3 sec</td>
<td>&lt; 3 sec</td>
</tr>
<tr>
<td>Calibration</td>
<td>Isobutylene gas</td>
<td>Isobutylene gas</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>500 cc/min</td>
<td>400 cc/min</td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>0% to 95% relative humidity (non-condensing)</td>
<td>0% to 95% relative humidity (non-condensing)</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-20°C to 50°C (-4 to 122°F)</td>
<td>-20°C to 50°C (-4 to 122°F)</td>
</tr>
<tr>
<td>Operation Time on Battery</td>
<td>16 hours typical (12 hours with alkaline battery)</td>
<td>16 hours typical (12 hours with alkaline battery)</td>
</tr>
<tr>
<td>Data-logging (optional)</td>
<td>6 month capacity at 1 minute intervals. Intervals user configurable from 1 to 3600 seconds</td>
<td>N/A</td>
</tr>
<tr>
<td>Data Export (optional)</td>
<td>PC compatible through USB port in charging cradle. Optional Bluetooth or wireless data transmission</td>
<td>N/A</td>
</tr>
<tr>
<td>Dimensions</td>
<td>25.5cm x 7.6cm x 6.4cm</td>
<td>25.5cm x 7.6cm x 6.4cm</td>
</tr>
<tr>
<td>Weight (including batteries)</td>
<td>738g</td>
<td>738g</td>
</tr>
</tbody>
</table>
The most advanced, sensitive and reliable handheld VOC detector on the market.
PARTICLE COUNTER

AIR QUALITY MONITOR
The HandiLaz® Mini can be used to measure the particle concentration of air in safety cabinets, cleanrooms, and HEPA filtered incubators. It provides an on-the-spot check that air quality is as it should be, and that your air filtration system is producing Grade A air to ISO or EU GMP standards.

The particle counter is calibrated by NIST traceable particles and adheres to the same standards of an independent inspector.

The HandiLaz Mini interfaces directly by cable to an optional printer or PC.

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Laser</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel Thresholds</td>
<td>3 channels: 0.3, 0.5 and 5µm</td>
</tr>
<tr>
<td>Calibration</td>
<td>NIST- traceable particles</td>
</tr>
<tr>
<td>Max Concentration (@5% coincidence error)</td>
<td>70 x 10^6 counts/m³</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>2.83 l/min (0.1 ft³/min)</td>
</tr>
<tr>
<td>Units</td>
<td>Counts, Counts/m³, Counts/ft³</td>
</tr>
<tr>
<td>Operation Time on Battery</td>
<td>3 hours typical</td>
</tr>
<tr>
<td>Data-logging</td>
<td>Stores up to 10,000 readings</td>
</tr>
<tr>
<td>Data Export</td>
<td>Report and data export to CSV file</td>
</tr>
<tr>
<td>Dimensions</td>
<td>11cm x 20cm x 7cm</td>
</tr>
<tr>
<td>Weight (excluding batteries)</td>
<td>680g</td>
</tr>
</tbody>
</table>

Quick
A basic scan will take less than a minute

Practical
Up to 10,000 readings can be stored

Extremely Accurate
Counts particles as small as 0.3 microns
# CONSUMABLES ORDER CODES

## EZ-STRIP & EZ-SQUEEZE

<table>
<thead>
<tr>
<th>EZ-STRIP PACK OF 20 CODE</th>
<th>EZ-SQUEEZE PACK OF 20 CODE</th>
<th>NOMINAL SIZE</th>
<th>USAGE</th>
<th>COLOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-72-1131/20</td>
<td>7-72-3131/20</td>
<td>131µm</td>
<td>Denudation</td>
<td>Blue</td>
</tr>
<tr>
<td>7-72-1135/20</td>
<td>7-72-3135/20</td>
<td>135µm</td>
<td>Denudation</td>
<td>Yellow</td>
</tr>
<tr>
<td>7-72-1145/20</td>
<td>7-72-3145/20</td>
<td>145µm</td>
<td>Denudation</td>
<td>White</td>
</tr>
<tr>
<td>7-72-1145L/20</td>
<td>7-72-3145L/20</td>
<td>145µm Long</td>
<td>Handling in tubes</td>
<td>White</td>
</tr>
<tr>
<td>7-72-1155/20</td>
<td>7-72-3155/20</td>
<td>155µm</td>
<td>Denudation</td>
<td>Green</td>
</tr>
<tr>
<td>7-72-1170/20</td>
<td>7-72-3170/20</td>
<td>170µm</td>
<td>Denudation</td>
<td>Red</td>
</tr>
<tr>
<td>7-72-1200/20</td>
<td>7-72-3200/20</td>
<td>200µm</td>
<td>Handling</td>
<td>Orange</td>
</tr>
<tr>
<td>7-72-1290/20</td>
<td>7-72-3290/20</td>
<td>290µm</td>
<td>Handling</td>
<td>Black</td>
</tr>
<tr>
<td>7-72-1600/20</td>
<td>7-72-3600/20</td>
<td>600µm</td>
<td>Handling</td>
<td>Brown</td>
</tr>
<tr>
<td>7-72-3002</td>
<td></td>
<td></td>
<td>EZ-Squeeze Handle fits all sizes in the EZ-Squeeze range</td>
<td></td>
</tr>
</tbody>
</table>

## EZ-TIP

<table>
<thead>
<tr>
<th>1 X VIAL OF 20 CODE (20 PIPETTES)</th>
<th>5 X VIAL OF 20 CODE (100 PIPETTES)</th>
<th>SINGLES CODE (20 PIPETTES)</th>
<th>NOMINAL SIZE</th>
<th>USAGE</th>
<th>COLOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-72-2075/1</td>
<td>7-72-2075/5</td>
<td>7-72-4075/20</td>
<td>75µm</td>
<td>Handling</td>
<td>Purple</td>
</tr>
<tr>
<td>7-72-2125/1</td>
<td>7-72-2125/5</td>
<td>7-72-4125/20</td>
<td>125µm</td>
<td>Denudation</td>
<td>Blue</td>
</tr>
<tr>
<td>7-72-2135/1</td>
<td>7-72-2135/5</td>
<td>7-72-4135/20</td>
<td>135µm</td>
<td>Denudation</td>
<td>Yellow</td>
</tr>
<tr>
<td>7-72-2145/1</td>
<td>7-72-2145/5</td>
<td>7-72-4145/20</td>
<td>145µm</td>
<td>Denudation</td>
<td>White</td>
</tr>
<tr>
<td>7-72-2155/1</td>
<td>7-72-2155/5</td>
<td>7-72-4155/20</td>
<td>155µm</td>
<td>Denudation</td>
<td>Green</td>
</tr>
<tr>
<td>7-72-2170/1</td>
<td>7-72-2170/5</td>
<td>7-72-4170/20</td>
<td>170µm</td>
<td>Denudation</td>
<td>Red</td>
</tr>
<tr>
<td>7-72-2200/1</td>
<td>7-72-2200/5</td>
<td>7-72-4200/20</td>
<td>200µm</td>
<td>Handling</td>
<td>Orange</td>
</tr>
<tr>
<td>7-72-2250/1</td>
<td>7-72-2250/5</td>
<td>N/A</td>
<td>250µm</td>
<td>Handling</td>
<td>Aqua</td>
</tr>
<tr>
<td>7-72-2290/1</td>
<td>7-72-2290/5</td>
<td>7-72-4290/20</td>
<td>290µm</td>
<td>Handling</td>
<td>Black</td>
</tr>
<tr>
<td>7-72-2600/1</td>
<td>7-72-2600/5</td>
<td>7-72-4600/20</td>
<td>600µm</td>
<td>Handling</td>
<td>Brown</td>
</tr>
</tbody>
</table>

## EZ-GRIP

<table>
<thead>
<tr>
<th>EZ-GRIP</th>
<th>NOMINAL SIZE</th>
<th>USAGE</th>
<th>COLOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-72-2800 EZ-Grip without Comfort Rest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-72-2802 EZ-Grip with Comfort Rest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-72-2000 EZ-Grip Spares Kit</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## FERTISAFE

<table>
<thead>
<tr>
<th>FERTISAFE</th>
<th>NOMINAL SIZE</th>
<th>USAGE</th>
<th>COLOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-90-305 Fertisafe Spray (1 litre bottle)</td>
<td>7-74-501/20</td>
<td>RI MSC (20)</td>
<td></td>
</tr>
</tbody>
</table>

## RI MSC & ACCESSORIES

<table>
<thead>
<tr>
<th>RI MSC &amp; ACCESSORIES</th>
<th>NOMINAL SIZE</th>
<th>USAGE</th>
<th>COLOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-72-2810 EZ-Stand</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
RI Pipettes are available in a range of options, below is a table showing these options with their product codes.

Please replace the **XX** in the code with the required bend angle to create the final code to be used for ordering. The bend options are 0°, 15°, 20°, 25°, 30°, 35°, 40° or 45°.

Injection Pipettes: Standard glass thickness is 1µm unless stated as Thin Glass (T code) which is 0.9µm. Standard toe length is 750µm, long toe length is 1000µm. Customisations are available upon request.

To easily select the correct pipette part number for your use visit www.research-instruments.com/pipettecodes

---

### INJECTION PIPETTES

<table>
<thead>
<tr>
<th>PIPETTES</th>
<th>THIN GLASS</th>
<th>INTERNAL DIAMETER (µm)</th>
<th>LONG TOE</th>
<th>CODE (FOR A BOX OF 20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICSI Spiked</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Injection</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>7-71-T4SIXX/20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>7-71-T5SIXX/20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>7-71-T8SIXX/20</td>
</tr>
<tr>
<td>ICSI Non-Spiked</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>7-71-T4SIXXL/20</td>
</tr>
<tr>
<td>Injection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>7-71-T5SIXXL/20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>7-71-T8SIXXL/20</td>
</tr>
</tbody>
</table>

### BIOPSY PIPETTES

<table>
<thead>
<tr>
<th>PIPETTES</th>
<th>INTERNAL DIAMETER - ID (µm)</th>
<th>PROFILE</th>
<th>CODE (FOR A BOX OF 20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biopsy</td>
<td>14, 20, 25, 30, 35, 40</td>
<td>SPIKED</td>
<td>7-71-14SBXX/20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NON-SPIKED</td>
<td>7-71-14NBXX/20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FLAT</td>
<td>7-71-14FBXX/20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7-71-20FBXX/20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7-71-25FBXX/20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7-71-30FBXX/20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7-71-35FBXX/20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7-71-40FBXX/20</td>
</tr>
</tbody>
</table>

### HOLDING PIPETTES

<table>
<thead>
<tr>
<th>PIPETTES</th>
<th>INTERNAL DIAMETER (µm)</th>
<th>CODE (FOR A BOX OF 20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICSI Holding</td>
<td>15</td>
<td>7-71-IHXX/20</td>
</tr>
<tr>
<td>Large Holding</td>
<td>25</td>
<td>7-71-LHXX/20</td>
</tr>
<tr>
<td></td>
<td>32</td>
<td>7-71-32HXX/20</td>
</tr>
</tbody>
</table>

### MECHANICAL DISSECTION & ASSISTED HATCHING PIPETTES

<table>
<thead>
<tr>
<th>PIPETTES</th>
<th>INTERNAL DIAMETER (µm)</th>
<th>CODE (FOR A BOX OF 20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical</td>
<td></td>
<td>7-71-MDXX/20</td>
</tr>
<tr>
<td>Dissection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assisted</td>
<td>10</td>
<td>7-71-AHXX/20</td>
</tr>
</tbody>
</table>
QUALITY ASSURANCE

STERILITY AND BIOCOMPATIBILITY TESTING

ALL RI MEDICAL DEVICES CARRY THE CE MARK

The CE mark shows that RI’s products comply with the Essential Safety Requirements of the European Medical Device Directive (93/42/EEC) as amended.

Many of our medical devices also have US FDA market clearance, Health Canada medical device licenses and certification in Taiwan and China. We are continuously working to expand our registration with the relevant medical device authorities across the world.

QUALITY MANAGEMENT

SYSTEM FOR MEDICAL DEVICES - EN ISO 13485:2012

At RI quality permeates all that we do. All RI products are designed, developed and manufactured within an EN ISO 13485:2012 environment.

All materials and packaging used within the manufacturing process of RI medical devices are comprehensively tracked and logged to ensure full traceability.

We hold ISO 9001:2008 and EN ISO 13485:2012 certification (including CMDCAS, KFDA and TFDA GMP). RI is registered with the US FDA for the supply of medical devices. Continual evaluation of our products has led to the creation of the finest range of devices on the market that clinics aspire to own and use.

CLEANROOM MANUFACTURING FACILITIES

RI consumables are manufactured and packaged in an ISO 14644 certified cleanroom. Our highly trained manufacturing personnel inspect each individual unit at every step of the production process to ensure only the highest quality devices reach your laboratory. For example, our quality control protocols require that micropipettes are examined five times before production is completed.

STERILISATION

Where applicable, products are sterilised by an approved gamma irradiation facility meeting ISO 11137 standards to a sterility assurance level (SAL) of 10-6. The shelf life of our pouch packed products is three years and five years for our blister packed products.

PREMIER STANDARD BATCH TESTING

RI’s range of consumables must pass stringent testing and inspection criteria to ensure that you receive the most consistent and high quality products. RI choose to test each finished sterility batch of consumables as we consider this is a true indication of product toxicity. Many manufacturers test for toxicity at the raw material stage only which will not reflect the effect of the manufacturing process on toxicity.

MOUSE EMBRYO ASSAY (MEA) FOR EMBRYO TOXICITY

Every sterility batch of finished consumables is tested by an independent laboratory using a 1-cell stage mouse embryo toxicity test. Embryos are also assessed at critical development points during the MEA to ensure maximum test sensitivity. Our pass criteria is ≥80% blastocyst after 120h.

RI’s range of consumables must pass stringent testing and inspection criteria to ensure that you receive the most consistent and high quality product.
LIMULUS AMEBOCYTE LYSATE (LAL) FOR ENDOTOXINS

Each sterility batch of finished product is tested for bacterial endotoxins. Our pass criteria is <20Eu per device.

HUMAN SPERM SURVIVAL ASSAY (HSSA)

Each sterility batch of finished injection pipettes within the RI Pipette range undergoes and passes a sperm motility bio assay. To pass the HSSA test, the motility of sperm must be ≥ 70% after 24 hours of sample preparation.

1 Refer to Mouse Embryo Assay (MEA) for Embryo Toxicity section
2 Refer to Limulus Amoebocyte Lysate (LAL) for Endotoxins section
3 Excludes Fertisafe Plus manufacture
4 Applicable to injection pipettes only
5 Refer to Human Sperm Survival Assay (HSSA) section

For further information about our products visit:
www.research-instruments.com