



# PRODUCT CATALOG

IVF LABS & LIFE SCIENCES





# ABOUT DIAMOND SPECTRUM

Welcome to Diamond Spectrum, a member of Taawon Group – Your Premier Partner in Laboratory Solutions!

At Diamond Spectrum, we specialize in providing an unparalleled range of high-end laboratory solutions, consumables, and disposables. Our commitment revolves around delivering excellence, compatibility, and exceptional value and support.

Discover a world of reliable solutions tailored to elevate your laboratory experience. Diamond Spectrum is here to redefine standards and exceed expectations in the pursuit of scientific excellence.



# OUR VISION

To be the leading partner in advancing laboratory and industrial technologies across the region, recognized for empowering innovation with a comprehensive range of reliable, cutting-edge systems and solutions.

# OUR MISSION

Our mission is to empower our customers' success by delivering superior-quality laboratory and industrial equipment, with high customer satisfaction rate, enabling measurable improvements in their operational performance each year



# TAAWON GROUP JOURNEY

Since its establishment, Taawon Group has grown from a local supplier into a trusted regional leader in laboratory and scientific equipment. Over the years, we have expanded our portfolio, forged global partnerships, and introduced pioneering technologies to the Middle East market. Today, our legacy is built on decades of expertise, innovation, and unwavering commitment to customer success.



**Taawon Founded in Jordan**



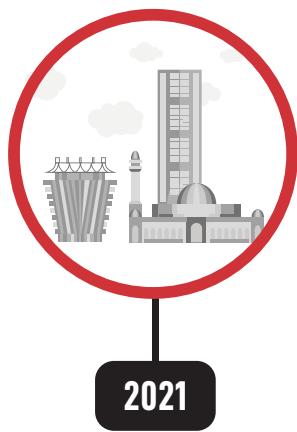
**Diamond Spectrum Founded in Saudi Arabia**



**Altayf Althahabi (TTS) Founded in UAE**



**Companies incorporated under Taawon Group**



**Diamond Spectrum Founded in Bahrain**

# ASSOCIATION & GROUP COMPANIES

**Taawon**  
Jordan

**Diamond Spectrum - DS**  
Saudi Arabia

**Altayf Althahabi - TTSL**  
United Arab Emirates

**Diamond Spectrum - DS**  
Bahrain



4000 + customers



100 + employees



4 countries



7 offices



# APPLICATIONS & INDUSTRIES

Taawon Group offers a comprehensive portfolio of laboratory, industrial, and scientific solutions designed to meet the highest industry standards and regulations in a wide variety of sectors.



**Pharmaceuticals**



**Energy & Petrochemicals**



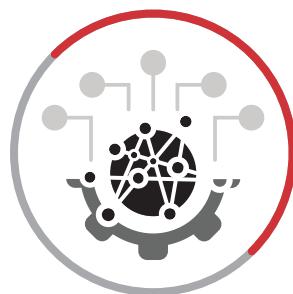
**Chemicals**



**Food, Beverage & Feed**



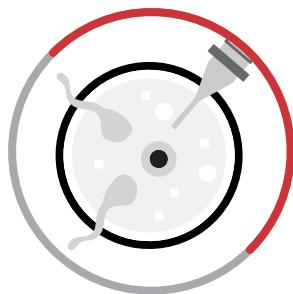
**Academia & Research**



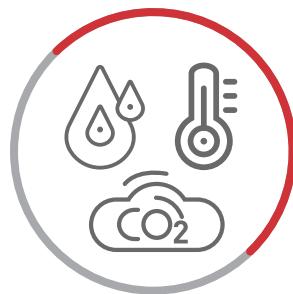
**Nano technology**



**Material Testing**



**IVF and Life Science**



**Warehouse Monitoring**

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**ESCO**  
®

MEDICAL

# IVF Lab Equipment

# IVF Lab Equipment

## Sample Handling

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### Multi-Zone ART Workstation

- Multiple heating zones provide precise temperature control across the work surface to prevent thermal shock.
- Integrated MIRI® chambers and microscope provisions centralize the workflow within a sterile vertical laminar flow.



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### MIRI® Laminar Flow Cabinet

- Electronically Commuted Motor (ECM) technology ensures energy-efficient, stable vertical laminar airflow for sample protection.
- Specialized design maintains a controlled environment for handling embryos and gametes outside the incubator.



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### AVT Anti-Vibration Table (MIRI® AVT)

- Specialized work surface isolates high-precision microscopes and balances from external mechanical vibrations.
- Eliminates disruptions to sensitive laboratory equipment to ensure accuracy during high-magnification tasks.



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### Versati™ Tabletop Ventilated Centrifuge

- High-speed rotation with various rotor types enables efficient separation of milliliter-scale heterogeneous mixtures.
- Ventilated design prevents heat buildup during centrifugation, protecting temperature-sensitive samples from degradation.



# IVF Lab Equipment

## Embryo Culture

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### MIRI® M Multiroom IVF Incubator

- Modular 18-chamber system allows for independent sample management without affecting neighboring environments.
- Movable chambers maintain environmental stability during transport, ensuring continuous protection for embryos.



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### MIRI® Multiroom Incubator

- Six independent chambers prevent cross-contamination and eliminate environmental fluctuations when access is required.
- Individual lid operation ensures that opening one chamber does not disturb the temperature or gas levels of others.



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### MIRI® Humidity Multiroom Incubator

- Robust heating and gas systems enable rapid recovery to maintain optimal embryo culture conditions.
- Technical design provides a humidified environment while actively preventing vapor condensation on surfaces.



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### MIRI® II-12 Multiroom Incubator

- Provides a stable culture environment at body temperature with precise CO2 and N2 regulation for gamete development.
- Multi-chamber isolation ensures a secure, dedicated workspace for high-volume IVF laboratory requirements.



# IVF Lab Equipment

## Embryo Culture

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### Mini MIRI® Incubators

- Delivers consistent culture performance using the MIRI® architecture in a reduced, space-saving footprint.
- Provides a dependable benchtop solution for laboratories requiring high-level environmental control in limited space.



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### Mini MIRI® Dry Incubator

- Two-chamber benchtop design offers the performance of larger MIRI® units in an affordable, compact format.
- Optimized for laboratories that prioritize footprint efficiency without sacrificing environmental stability.



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### Mini MIRI® Humidity Incubator

- Direct heat regulation prevents vapor condensation and facilitates faster temperature and gas recovery times.
- Compact humidified system ensures stable physiological conditions for embryos in a small benchtop unit.



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### CelCulture® CO<sub>2</sub> Incubator

- ISOCIDE™ antimicrobial coating and ISO Class 5 cleanliness minimize the risk of microbial and particulate contamination.
- Rapid temperature and gas recovery systems with an inner door kit replicate natural growth environments.



# IVF Lab Equipment

## Time-Lapse

### MIRI® Time-Lapse Incubator

- Independent Multi-Chamber Architecture: Available in 6 (TL6) or 12 (TL12) independent chambers, allowing for isolated patient-specific environments that prevent cross-contamination and thermal fluctuations in neighboring zones.
- Rapid Environmental Kinetics: Engineered for high-speed recovery, achieving temperature stabilization in less than 1 minute and CO<sub>2</sub> concentration recovery in approximately 3 minutes following chamber access.
- Integrated Morphokinetic Imaging: Features a built-in microscope and camera system for continuous, non-invasive observation, eliminating the physiological stress associated with removing embryos for manual microscopy.
- Active Thermal Lid Heating: Employs heated lids to actively prevent vapor condensation and ensure superior temperature uniformity across the top and bottom of each culture chamber.
- Precision Gas Regulation: Includes a built-in tri-gas mixer and advanced regulation system that allows for customized CO<sub>2</sub> and O<sub>2</sub> levels without the need for pre-mixed gas cylinders.
- Advanced Gas Purification: Utilizes a recirculating gas loop equipped with both VOC/HEPA filtration and integrated UV-sterilization to maintain high biological safety and air purity standards.
- Independent Sensory Monitoring: Each chamber is equipped with its own PT-1000 sensor and gas sampling port, enabling independent, high-precision validation of the internal environment.
- Optimized Dish Capacity: Specifically designed for the CultureCoin®, which utilizes a specialized well-format to accommodate 14 embryos per chamber, totaling 84 (TL6) or 168 (TL12) embryos per unit.
- Dedicated Data Architecture: Features a built-in computer with 256 GB of local storage and a dedicated MIRI® TL Server to ensure continuous data logging and fail-safe image archiving.
- Advanced Analytics Software: The MIRI® TL Viewer software provides specialized tools for morphokinetic annotation, side-by-side embryo comparison, and graphical summary data for viability assessment.



# IVF Lab Equipment

## Consumables

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### CultureCoin® - Embryo Culture Dish for the MIRI® TL

- Specifically engineered for the MIRI® TL to enable high-quality, real-time image capture of developing embryos.
- Specialized dish design allows for continuous time-lapse monitoring without removing embryos from the stable incubator environment.



## Quality Control

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### MIRI® GA Gas and Temperature Validation Unit

- Tabletop device performs continuous external validation of gas and temperature for multiple incubator types simultaneously.
- Ensures quality control compliance by providing easy, accurate verification of the internal environment of IVF incubators.



## Traceability Tool

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### MIRI® Evidence RFID Witnessing and Traceability System

- RFID technology eliminates human error and prevents sample mix-ups during complex laboratory procedures.
- Automated data management ensures full traceability and helps clinics comply with strict regulatory documentation standards.



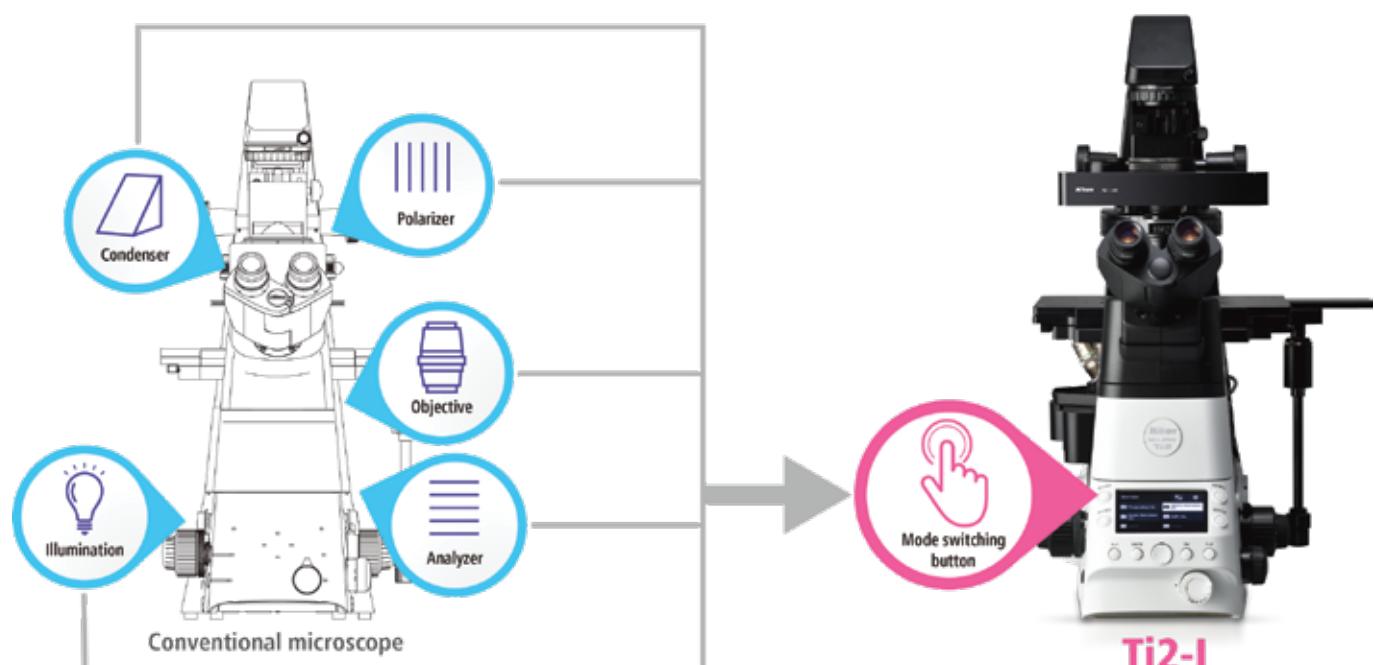


# Optical Imaging in IVF labs

# Analytical Instruments

## Inverted Microscopes - ECLIPSE Ti2-I

- Real-Time Focus Stabilization: Employs the Perfect Focus System (PFS), which uses a linear sensor and infrared laser to counteract focus drift caused by thermal changes or mechanical vibrations during long-term embryo observation.
- Large-Format Imaging Throughput: Features an ultra-wide 25mm Field of View (FOV) that maximizes the capture area of modern large-format CMOS sensors, reducing the time required to scan multiple wells in a culture dish.
- Plastic Dish Compatibility: Utilizes Nikon Advanced Modulation Contrast (NAMC) optics to provide high-contrast, 3-dimensional imaging of transparent oocytes and embryos through standard plastic culture ware.
- Mechanical Rigidity for Micromanipulation: The chassis is engineered with a high-stability, reinforced structure to minimize flex and vibration, providing a rock-solid platform for ICSI and biopsy micromanipulators.
- Long Working Distance (LWD) Optics: Designed with CFI60 LWD objectives that allow for high-resolution imaging through thick-bottomed plastic dishes and heated stages used in IVF workflows.
- Intelligent Component Tracking: Integrated sensors automatically detect and record the objective magnification and optical path settings, ensuring metadata integrity and reducing manual documentation errors.
- Automated Optical Path Alignment: Includes the Ti2 Assist Guide, which provides real-time feedback and digital troubleshooting via on-board sensors to ensure the microscope is always optimally aligned for imaging.



# Optical Imaging in IVF labs

## Inverted Microscopes - ECLIPSE Ti2

- Ultra-Wide Field of View: Provides an unprecedented 25mm Field of View (FOV), which maximizes the imaging area of modern large-format CMOS sensors to reduce tile-scanning time and increase data throughput for multi-well plates.
- Hardware Autofocus Stability: Integrates the Perfect Focus System (PFS), utilizing a dedicated infrared laser to detect the coverslip interface and automatically compensate for focus drift caused by thermal fluctuations or mechanical movement.
- Intelligent Assist Guide: Employs an internal sensor network that monitors the status of every optical component; it alerts users to setting errors (such as incorrect DIC prisms or filter cubes) via a digital display to prevent compromised experiments.
- Vibration-Damping Design: Engineered with a highly rigid, symmetrical chassis that minimizes mechanical flex and thermal expansion, providing a stable platform essential for delicate micromanipulation (ICSI) and high-resolution imaging.
- Uniform Illumination: Incorporates a fly-eye lens in the light path to ensure perfectly even light distribution across the entire 25mm FOV, eliminating the "vignetting" or dark corners typically found in large-format imaging.
- Advanced Phase/Contrast Optics: Optimized for Nikon Advanced Modulation Contrast (NAMC), enabling high-resolution, 3D-like imaging of transparent specimens through standard plastic culture dishes that are usually incompatible with traditional DIC.
- Ergonomic Status Management: Features a front-mounted LCD Status Display and streamlined control layout, allowing operators to verify magnification, optical path settings, and system status at a glance without looking away from the specimen.



# Optical Imaging in IVF labs

## Stereo Microscopes - SMZ25 / SMZ18

- Unprecedented Zoom Range: Features a world-leading 25:1 zoom ratio (on the SMZ25), allowing users to transition seamlessly from a macro-view of an entire 35mm dish to high-magnification imaging of individual cells without the need to switch objectives.
- Auto Link Zoom (ALZ): Automatically adjusts the zoom factor when switching between objectives to maintain a constant field of view, solving the problem of losing the specimen's location or context during magnification changes.
- Superior Fluorescence Signal-to-Noise Ratio: Utilizes an improved optical path and a Fly-eye lens on the epi-fluorescence attachment to provide exceptionally bright and uniform illumination, even at low magnifications where uneven lighting typically occurs.
- High-Resolution Imaging (CFI60 Optics): Employs apochromatic optics with high Numerical Aperture (NA) to deliver diffraction-limited resolution, eliminating the blurriness and chromatic aberrations often found in traditional stereo microscopes at high zoom levels.
- Integrated Digital Metadata: Features internal sensors that automatically detect and communicate the current zoom level and magnification to imaging software, ensuring automated scale bar accuracy and eliminating manual documentation errors.
- Motorized Precision and Stability: The motorized focus and zoom modules allow for operation via a remote controller or PC, which minimizes mechanical vibration transfer to the sample—a critical requirement for delicate micro-dissection or manipulation.
- Enhanced Sample Safety: High-efficiency optical coatings and bright-field technologies allow for lower excitation light intensity, reducing the risk of phototoxicity and photobleaching when observing sensitive live biological samples for extended periods.



# Optical Imaging in IVF labs

## Upright Microscopes - ECLIPSE Ci-L plus

- Integrated Specimen Status Display: Features an LCD screen at the base of the microscope that displays magnification and light intensity, allowing the operator to verify data at a glance without having to check the objective nosepiece.
- Automatic Intensity Reproduction: Utilizes the Light Intensity Manager (LIM) to remember and automatically restore specific brightness levels for each objective, eliminating the need for manual adjustment when switching magnifications.
- Ergonomic Height Customization: Equipped with an Ergo Binocular Tube that can be extended and tilted, solving the pain of neck and back strain during long hours of clinical screening.
- High-Durability Eco-Illumination: Employs a high-luminescence LED system with a 60,000-hour lifespan, providing consistent "fly-eye" uniform lighting while removing the maintenance burden of frequent halogen bulb changes.
- Intelligent Digital Integration: Features a dedicated "Capture" button on the microscope base that syncs with Nikon's Digital Sight cameras, enabling the user to acquire images seamlessly without taking their eyes off the eyepieces.
- Eco-Friendly Power Management: Includes an ECO mode that automatically turns off the illumination after a period of inactivity, extending the life of the optical components and reducing laboratory energy consumption.
- High-Contrast Pathological Imaging: Optimized for use with CFI60 Plan Apochromat objectives, which provide superior chromatic aberration correction and flat-field clarity for accurate diagnosis of complex tissue samples.



# Optical Imaging in IVF labs

## Micromanipulators

- Integrated Thermal Stability: The Ci-L plus utilizes a low-heat Eco-illumination LED system, which prevents the localized stage heating common with halogen bulbs, ensuring that micromanipulators and sensitive gametes remain at a stable, regulated temperature.
- Vibration-Isolated Architecture: The microscope is engineered with a highly rigid, reinforced chassis that provides a solid foundation for mounting manipulators, effectively dampening environmental micro-vibrations that can cause pipette tip drift.
- Tactile Ergonomic Control: Features a Hanging Joystick design that allows the operator to rest their arms comfortably on the table surface, providing precise, 3D oil-hydraulic fine movement without the muscle fatigue associated with upright controls.
- Streamlined "Resume" Mechanism: Incorporates a pipette position memory function that allows the operator to quickly raise the pipette for dish exchange and return it precisely to the original focal plane, significantly reducing workflow downtime.
- Hybrid Coarse/Fine Drive: Combines a 3D motor-driven coarse manipulator for rapid initial positioning with a 3D oil-hydraulic fine manipulator, enabling ultra-smooth, micron-level control during delicate ICSI procedures.
- Universal Angle Adjustment: Equipped with a universal joint that allows for accurate pipette holder angle calibration, ensuring the approach angle can be optimized for different dish heights and specimen types without affecting mechanical stability.



# Optical Imaging in IVF labs

## Tokai Hit Microscope Original Top Heater

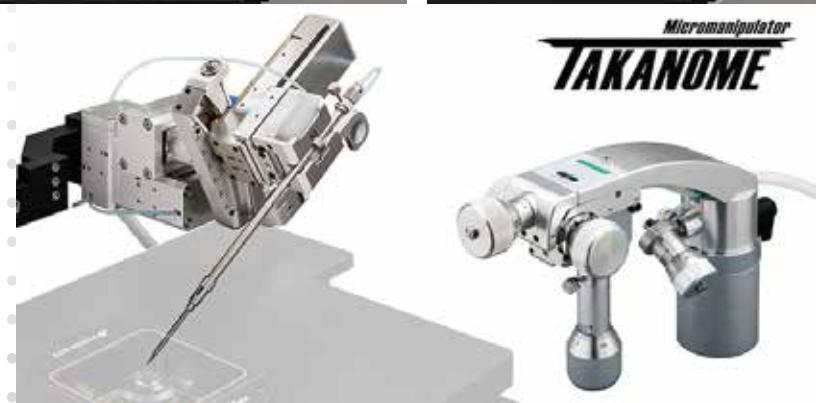
- Based on the technical specifications of the Tokai Hit Thermo Plate (Nikon edition), here are 7 technical points regarding its design and performance:
- Continuous Current Control: Employs specialized regulation to minimize focus drift caused by thermal expansion and prevents light intensity changes, providing superior stability over conventional ON/OFF controllers.
- Original Clear Glass Heater: Features a high-strength glass surface that maintains stable, uniform temperature distribution across the observation area, supporting clear visibility for various vessel types.
- Real-time Sample Feedback: Includes a sterilized sensor that measures the actual temperature of the culture media, allowing the controller to accurately regulate the heater based on direct sample signals.
- Integrated Condition Monitoring: Features a "Plate LED Indicator" on the heater surface that visualizes the status of the plate (e.g., green when ready) so the operator can confirm conditions without checking the controller.
- One-Touch Calibration: Built-in intelligent software allows for quick calibration to set the optimal PID (Proportional-Integral-Derivative) values based on the specific laboratory environment with a single touch.
- High-Durability Warranty: The system is constructed using strengthened or hard glass, backed by a 10-year free-repair service for glass breakage to ensure long-term laboratory reliability.
- Compact Controller Architecture: The miniaturized controller is roughly the size of a smartphone and features a versatile mounting hook for flat, upright, or wall-hanging placement to save space in clean benches.



# Optical Imaging in IVF labs

## Narishige Micromanipulator

- Integrated 4-Axis Mechanical-Hydraulic Hybrid: Combines 3D oil hydraulic fine movement with a dedicated 1D motorized or manual coarse linear axis, allowing for rapid initial approach and sub-micron final positioning within the same integrated drive unit.
- Synchronous 1:1 Movement Ratio: Engineered with a precision-bored master-slave cylinder system that ensures the pipette tip replicates the joystick's displacement with zero lag and high-fidelity haptic feedback, critical for delicate zona pellucida penetration.
- Virtual Axis "Home" Calibration: Incorporates a mechanical return-to-origin mechanism that allows the operator to lift the pipette for dish exchange and return it precisely to the pre-set focal plane without recalibrating the XYZ coordinates.
- Volumetric Expansion Compensation: The hydraulic circuit is constructed with low-thermal-expansion materials and high-viscosity oil to minimize "drift" caused by ambient laboratory temperature fluctuations, maintaining pipette tip stability over long procedures.
- Universal Angle-Adjustable Mounting: Features a high-rigidity universal joint interface that allows for the independent adjustment of the pipette's approach angle (from 0° to 40°) without introducing mechanical play or compromising the coaxiality of the hydraulic drive.





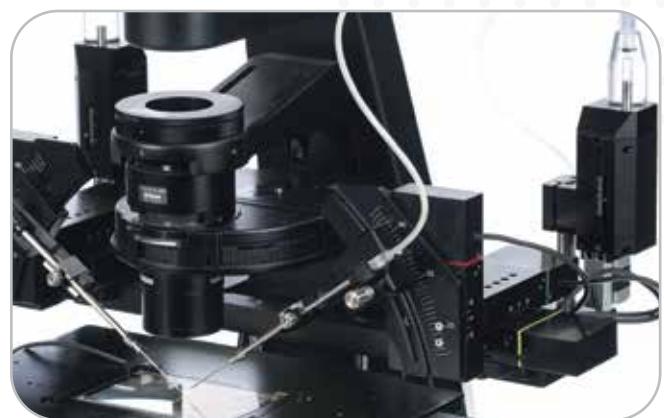
# Motorized Micromanipulation System for ICSI

# Motorized Micromanipulation System for ICSI

## Joystick-Controlled Precision for ICSI

This fully motorized ICSI micromanipulation system integrates an in-house developed joystick with stepper-motor technology to provide precise, stepless pipette control. It enables one-handed operation of XYZ axes, aspiration, injection, and immobilization, ensuring efficiency and repeatability. The system's swing-out pipette holder maintains focus during angle adjustment and allows fast, accurate pipette exchange.

Built with robust aluminum mechanics and real-time closed-loop pressure control, it eliminates variables such as air compression, leakage, or tubing elasticity, delivering consistent performance in advanced ICSI workflows.



# Motorized Micromanipulation System for ICSI

## Joystick-Controlled Precision for ICSI

- Stepper-Motor Precision Control
  - Ultrastepless, leakage-free pipette movement through patented motorized technology.
- One-Hand Joystick Interface
  - Single-hand operation of XYZ movement, pressure control, aspiration, injection, and automated demobilization.
- Automated Specimen Demobilization
  - Joystick-activated demobilization function instantly immobilizes the specimen upon command.
- Pipette Angle & Swing-Out System
  - Adjustable pipette angle (20°–45°) maintained in focus; swing-out adapter enables fast, precise pipette exchange.
- Real-Time Closed-Loop Pressure Control
  - Integrated pressure system (air-and-oil hybrid) with sensors eliminates inconsistencies from air compression, leaking, or tubing elasticity.

ICSI System fully motorized



ICSI System with manual Oil



ICSI System with manual Air



ICSI System with manual Air/ Oil





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**nilotech**

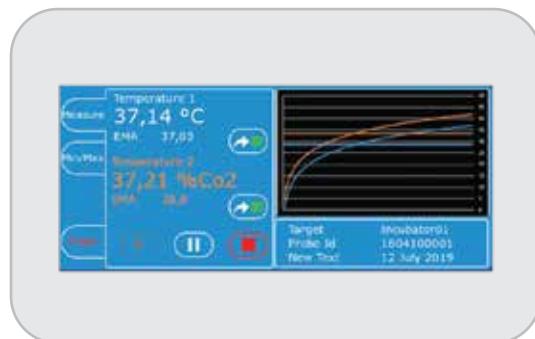
**Monitoring, Control,  
and Calibration of  
IVF lab equipment**

# Monitor, Control, & Calibrate your IVF equipment

## All-in-one reference instrument

The NiloChecker is an all-digital, multi-probe reference instrument engineered for laboratory quality control, capable of executing up to five simultaneous environmental measurements. It features an intuitive 7-inch touchscreen interface that guides users through compliance-based measurement protocols with "target-select" functionality for streamlined data organization. The instrument requires no calibration or maintenance—the probes themselves contain calibration data and can be serviced independently—while the high-capacity battery supports extended, mobile QC usage.

- **Multi-Probe Capability**
  - Supports up to five simultaneous measurements for comprehensive environmental monitoring
    - Temperature Measurements
    - Gas Measurements
    - Other Measurements
- **Touchscreen Interface**
  - 7-inch glove-compatible display with intuitive software and guided protocols
- **Target-Select Function**
  - Simplifies data structuring and reporting through standardized workflows
- **Maintenance-Free Operation**
  - Fully digital design; calibration stored in probes for independent servicing
- **Extended Battery Life**
  - High-capacity battery enabling long measurement sessions without interruption





# MIMFERTILITY.

**AI Assistant for  
Embryo Selection**

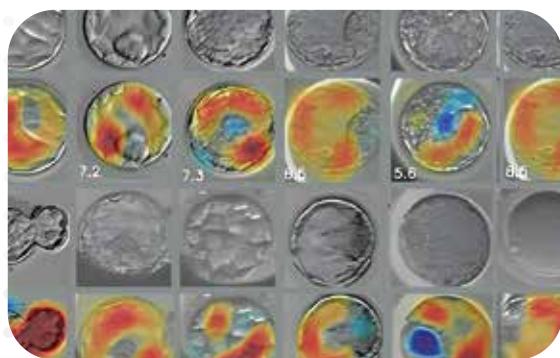
# AI assistant for embryo selection

## AI-Powered 5-Day Embryo Assessment Tool

### EMBRYOAID.

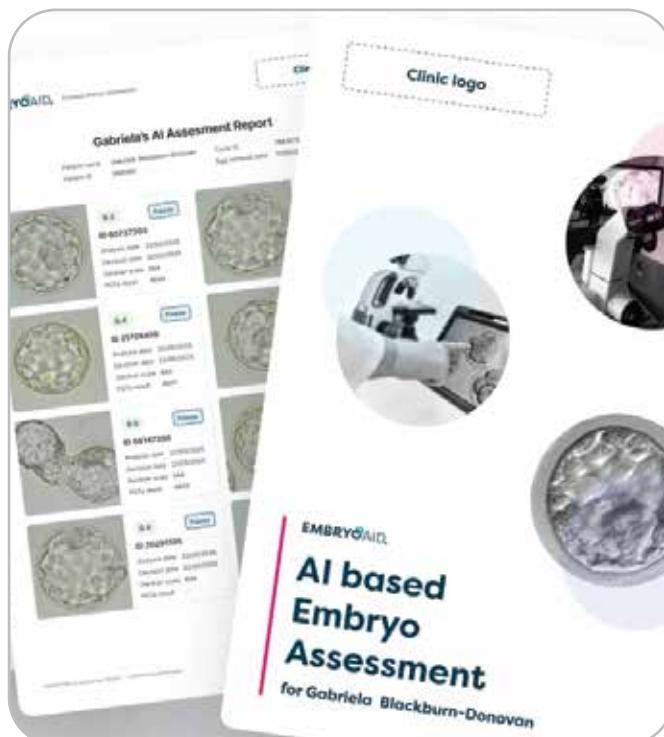
EMBRYOAID is a CE-marked, AI-powered software platform developed by MIM Fertility for evaluating Day-5 embryos. Trained on thousands of embryo images, it provides embryo rankings that correlate approximately 80 % with senior embryologist assessments. The platform enhances standardization by minimizing subjectivity and reducing variability. Its scores have been shown to correlate with key markers such as embryo morphology, developmental velocity, ploidy status, and clinical outcomes.

- **AI-Driven Training Data**
  - Developed using thousands of embryo images to train deep learning models aimed at supporting embryo selection.
- **Performance Correlation**
  - Embryo rankings produced by EMBRYOAID show an approximately 80 % correlation with assessments made by senior embryologists.
- **Standardization & Objectivity**
  - Designed to reduce subjectivity in embryo evaluation by applying the same objective criteria consistently across labs and evaluators.
- **Correlation with Biological & Clinical Metrics**
  - EMBRYOAID's scores correlate with embryo morphology, developmental velocity (kinetics), ploidy (genetic status), and clinical outcomes including implantation potential.



SCORE

9.1





Vitrolife

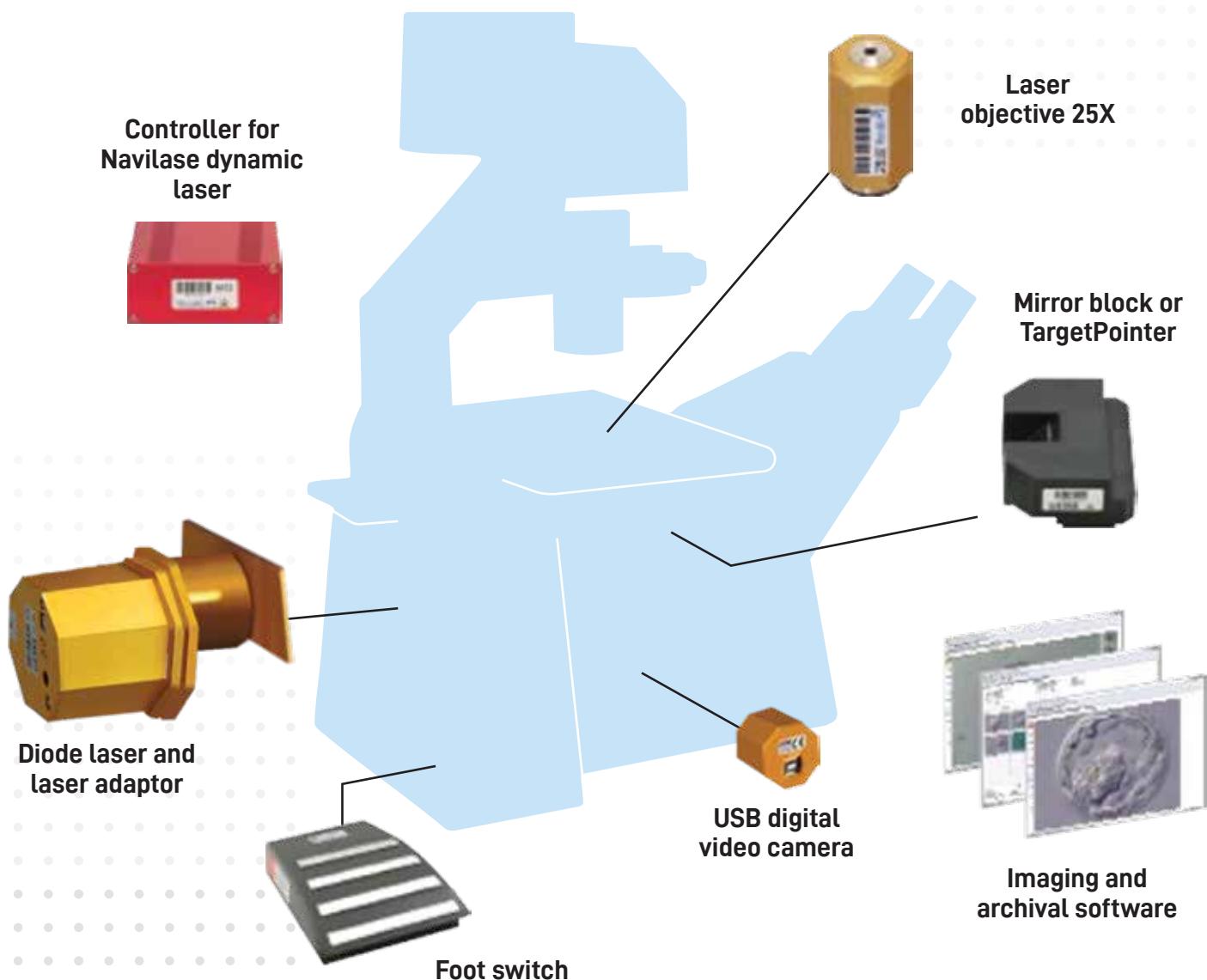
**Clinical Laser &  
imaging systems**

# Clinical Laser & imaging systems

## Imaging Platform for Assisted Reproduction

This Octax modular laser and imaging platform serves as an advanced multipurpose system tailored for assisted reproduction applications in IVF laboratories. It seamlessly integrates laser technology with digital imaging and analysis tools to support procedures such as embryo hatching, biopsy, vitrification preparation, and sperm viability assessment.

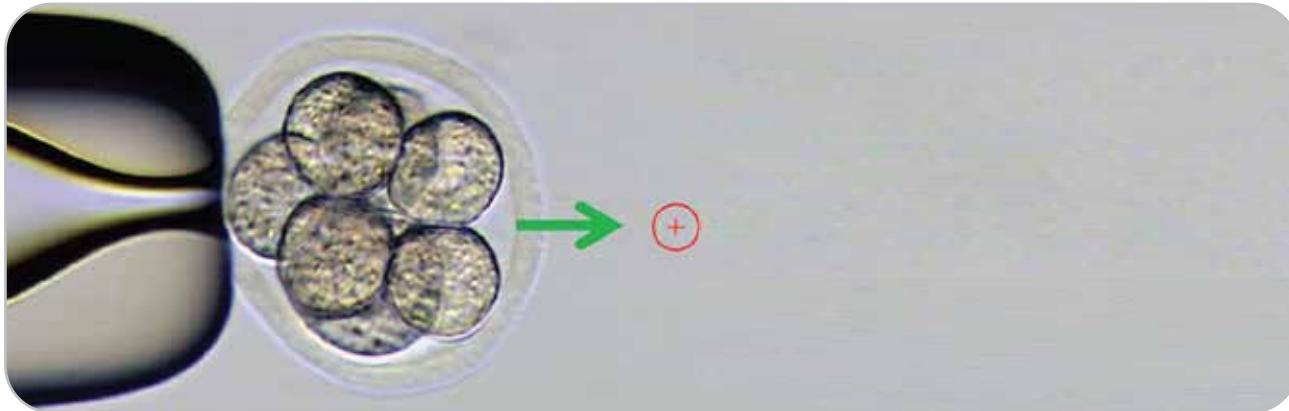
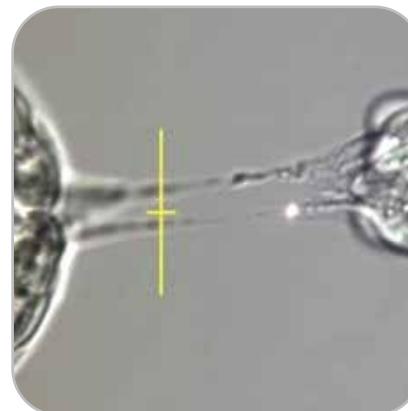
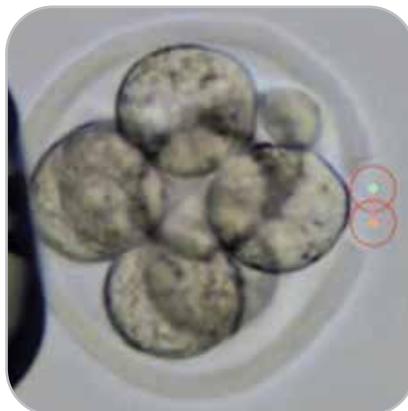
Designed with calibration-free operation, it combines high image quality, intuitive software, and flexible hardware configuration to optimize safety, efficiency, and workflow standardization in clinical embryology.



# Clinical Laser & imaging systems

## Imaging Platform for Assisted Reproduction

- **Multipurpose Platform Integration**
  - Combines laser photomanipulation with digital imaging and analysis in a unified modular architecture.
- **Calibration-Free Operation**
  - Maintains consistent performance without recalibration post-installation, enhancing workflow continuity.
- **Comprehensive IVF Application Coverage**
  - Enables assisted hatching/thinning, blastomere and trophectoderm biopsy, blastocyst collapsing, and sperm viability testing—all within one system.
- **User-Friendly Imaging Software**
  - EyeWare software delivers intuitive navigation for laser control, image capture, archiving, and documentation, amplifying usability and safety.
- **Clinically Proven Safety**
  - Extensive validation in over 100 scientific studies, with no detrimental effects on oocytes, embryos, or resulting children.





# Vitrolife

## Oocyte & Sperm Processing Solutions

# Optical Imaging in IVF labs

## Sperm Processing

### G-IVF™ PLUS

- Fertilisation-Optimized Medium
  - Contains all components necessary to support both oocyte and sperm function during fertilisation.
- Buffered Composition
  - Bicarbonate-buffered formulation supplemented with human serum albumin.
- Equilibration Requirements
  - Ready for use after equilibration at +37 °C in 6 % CO<sub>2</sub> environment.
- Metabolic Support
  - Includes both glucose and fructose to support the functionality of cumulus cells and sperm.
- Workflow Versatility
  - Compatible for multiple sperm preparation tasks including dilution of gradient solutions, washing, sperm counting, and final dilution for fertilisation.



### MicroCell & Accessories

- Disposable Counting Chamber
  - Single-use design with two or four independent chambers for accurate semen sample assessment.
- Precision 20 µm Chamber Depth
  - Engineered with uniform and fixed chamber depth verified by laser interferometry to prevent distortion and ensure consistent measurement.
- Hydrophobic, Non-Vented Construction
  - Chamber design minimizes sample leakage, enhances stability, and reduces potential contamination for both manual and automated analysis compatibility.



# Oocyte & Sperm Processing Solutions

## IVF Media & Oil

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### Gx Media

Triple antioxidant protection for improved embryo viability



### OVOIL™

OVOIL and OVOIL HEAVY for covering of medium during in vitro fertilisation and micromanipulation procedures



### EmbryoGlue®

EmbryoGlue®, a hyaluronan-rich transfer medium, designed to promote embryo implantation



### G-IVF™ PLUS

G-IVF Plus is a fertilisation medium for handling and preparation of gametes. Gx-IVF has triple antioxidant protection for improved embryo viability



### G-MOPS™

G-MOPS PLUS is a media for handling oocytes and embryos outside the incubator. Gx-MOPS PLUS has triple antioxidant protection for improved embryo viability



# Oocyte & Sperm Processing Solutions

## IVF Media & Oil

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### **G-TL™**

G-TL is the first culture medium specifically designed for time-lapse. Gx-TL has triple antioxidant protection for improved embryo viability

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### **G-1™ PLUS**

G-1 PLUS is a media for culture of embryos from the pronucleate stage to day 2 or day 3

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### **G-2™ PLUS**

G-2 PLUS is a media for culture of embryos from day 3 to the blastocyst stage

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### **G-GAMETE™**

G-GAMETE is a pH stable medium, after incubation in CO<sub>2</sub>, to support oocytes and embryos outside of the incubator

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### **ASP™**

ASP is an oocyte aspiration medium, designed for oocyte retrieval procedures and rinsing (follicle-flushing)

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# Oocyte & Sperm Processing Solutions

## IVF Media & Oil

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### G-PGD™

G-PGD is designed to facilitate embryo biopsy and maintains pH during the biopsy procedure



### G-RINSE™

G-RINSE is a solution for rinsing of contact materials and washing of the cervix before oocyte aspiration and embryo transfer



### HSA-solution™

HSA-solution contains human serum albumin and is a supplement for all embryo culture media



### HYASE-10X™

HYASE-10X facilitates denudation prior to ICSI procedures. It contains hyaluronidase for in vitro removal of cumulus cells



### ICSI™

ICSI is designed for the immobilization and isolation of sperm prior to intracytoplasmic sperm injection, ICSI



# Oocyte & Sperm Processing Solutions

## Cryopreservation Media & Device

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### Ultra RapidWarm™ Blast

Media for warming of vitrified human blastocyst stage embryos



### Rapid-i™ Vitrification System

Vitrification device and accessories for time-efficient, easy and successful vitrification



### RapidVit™ & RapidWarm™ Blast

Media for vitrification and warming of blastocyst stage embryos



### RapidVit™ & RapidWarm™ Oocyte

Media for vitrification and warming of oocytes



### RapidVit™ & RapidWarm™ Omni

Media for vitrification and warming of all cell stages



# Oocyte & Sperm Processing Solutions

## Cryopreservation Media & Device

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### RapidVit™ & RapidWarm™ Cleave

Media for vitrification and warming of cleavage stage embryos



### ThawKit™ Cleave

Media for thawing of pronuclear oocytes and cleavage stage embryos



### SpermFreeze Solution™

Media for cryopreservation of human sperm



# Oocyte & Sperm Processing Solutions

## Embryo Transfer

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### EmbryoGlue®

EmbryoGlue®, a hyaluronan-rich transfer medium, designed to promote embryo implantation



# Oocyte & Sperm Processing Solutions

## Oocyte Retrieval Needles

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### Sense™ Single and Double Lumen

Optimise oocyte retrieval performance and improve patient comfort with high quality needles



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### Conventional Single and Double Lumen

Maximise oocyte retrieval performance with high quality needles



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### Needle accessories

Tubing and gel to facilitate the oocyte retrieval process



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### Needle accessories

Tubing and gel to facilitate the oocyte retrieval process





 **BINDER**

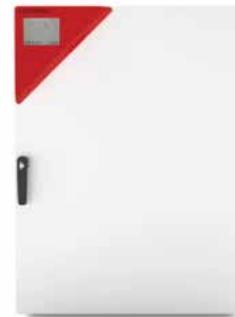
# Operational Environment Control Systems

# Microbiology Lab Solutions

## Incubation and Plant Growth

### CO2 incubators

- Temperature range: from ambient +4 °C (or +6 °C) up to +50 °C; humidity up to ~90-95 % RH; CO<sub>2</sub> control range 0–20 vol. % with IR sensor technology.
- Features hot-air sterilisation up to +180 °C, seamless stainless-steel deep-drawn inner chamber, double-pan humidification with condensation-protection, and USB/ethernet data logging.



### Cooling incubators

- Temperature range: from +4 °C (or 0 °C) up to +100 °C (or higher) using compressor or Peltier cooling; APT.line™ pre-heating chamber technology ensures uniformity (e.g., 0.3 K at 37 °C).
- Additional features: adjustable fan speed, inner door made of safety-glass, class 3.1 independent temperature safety device (DIN 12880) with visual/ acoustic alarm, USB data interface.



### Standard incubators

- Temperature range from ambient +5 °C up to +100 °C (or specific models +30 °C to +70 °C) with convection type options.
- Convection and control features: adjustable exhaust-air flap, controller with timer functions, inner door of tempered safety glass, class 3.1 independent temperature safety device per DIN 12880.



### Drying and heating chambers

- Situated in gravity convection or forced convection configurations (Series ED, FD, FED etc.), offering temperature ranges from ambient +5 °C (or +7 °C above) up to +250–300 °C, with homogeneous temperature distribution via APT.line™.
- Equipped with USB or Ethernet connectivity for data logging, intuitive controllers (LCD display) and energy-efficient design.





# RAININ

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Pipetting 360 +

# Liquid Handling Solutions

# Liquid Handling Solutions

## Pipettes

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### Single Channel Pipettes

- Available in both manual and electronic formats with Universal-fit or LTS tip compatibility, designed for ergonomic and durable daily use.
- Deliver precise micro- to milliliter volume transfer, with optimized mechanics for smooth operation and reduced user fatigue.



### Multichannel Pipettes

- Provide consistency across 8 or 12 channels, ensuring synchronized volume delivery in plate workflows
- Offered in manual, electronic, and adjustable spacer variants to adapt to varying lab format needs.



### High-throughput platforms

- Instruments like the 96-channel semi-automated systems streamline 96-/384-well plate workflows with improved speed and accuracy.
- Designed to combine efficiency and ease of use for repetitive plate-based pipetting without full robotic complexity.



### Repeater pipettes

- Manual versions (AutoRep) support dosing ranges from 2  $\mu$ L up to 5 mL and allow multiple aliquots per aspiration cycle.
- Electronic types (NanoRep) enable precise, repeat non-contact dispensing down to sub-microliter volumes.



### Electronic multichannel adjustable spacer pipettes

- The E4 XLS Adjustable Spacer models support three volume ranges (5-50  $\mu$ L, 20-300  $\mu$ L, 100-1200  $\mu$ L).
- They allow continuous nozzle spacing adjustment to transition between tubes and plate formats efficiently.



# Liquid Handling Solutions

## Pipette Tips

- Pipette tips are disposable, form-fitting polypropylene tips used to ensure accurate and consistent micro-volume transfers in research workflows.
- They are autoclavable and chemically stable, preserving integrity in diverse solvent and buffer environments.
- Filtered tips are certified free of RNase, DNase, DNA, and pyrogens, and sterilized post packaging to prevent contamination.
- Low-retention tips incorporate superhydrophobic surfaces to reduce sample adherence and improve recovery of viscous or low surface tension liquids.
- Wide-orifice tips minimize shear stress and reduce flow resistance when handling delicate or viscous samples.
- Extended-length tips are designed to reach into deep, narrow vessels, enabling access in tall or narrow labware.
- Large-volume tips (10 mL – 20 mL) with macro FinePoint geometry provide accurate dispensing of bulk liquids.
- Positive displacement syringe or capillary tips suit viscous, volatile, or high-density liquids by eliminating air gap effects.
- ShaftGard 10  $\mu$ L tips wrap the pipette's ejector and shaft to guard against cross-contamination in critical applications.
- Rainin tips undergo continuous quality control testing to meet rigorous cleanliness and physical specification standards.



# Liquid Handling Solutions

## Semi-Automated Pipetting Systems

- The high-throughput platform line comprises semi-automated 96-channel pipetting systems tailored for 96- and 384-well workflows.
- The BenchSmart 96 system supports three quick-change pipetting heads covering volumes from 0.5  $\mu$ L to 1 mL.
- The MicroPro 96-channel system features "Pipetting Depth Recall" to maintain consistent tip immersion levels across wells.
- BenchSmart's interface offers touchscreen control of aspiration, dispensing, tip loading, and ejection.
- BenchSmart supports multiple pipetting modes including basic, dilute, multi-dispense, reverse, volume sequencing, mixing, and cycle count.
- Its four-plate layout is designed to minimize tip or reservoir swaps, streamlining multi-step protocols.
- The BenchSmart software allows user accounts, password protection, mode presets, and protocol memory for reproducible workflows.
- MicroPro is among the smallest 96-channel pipettors on the market, optimizing use of bench or biosafety cabinet space.
- MicroPro's precision specs include a volume range of 2–20  $\mu$ L, with accuracy and precision designed to stay within low percentage error tolerances.
- Pipette tips designed for these systems use Rainin BioClean LTS technology, compatible with semi-automated pipetting performance requirements.

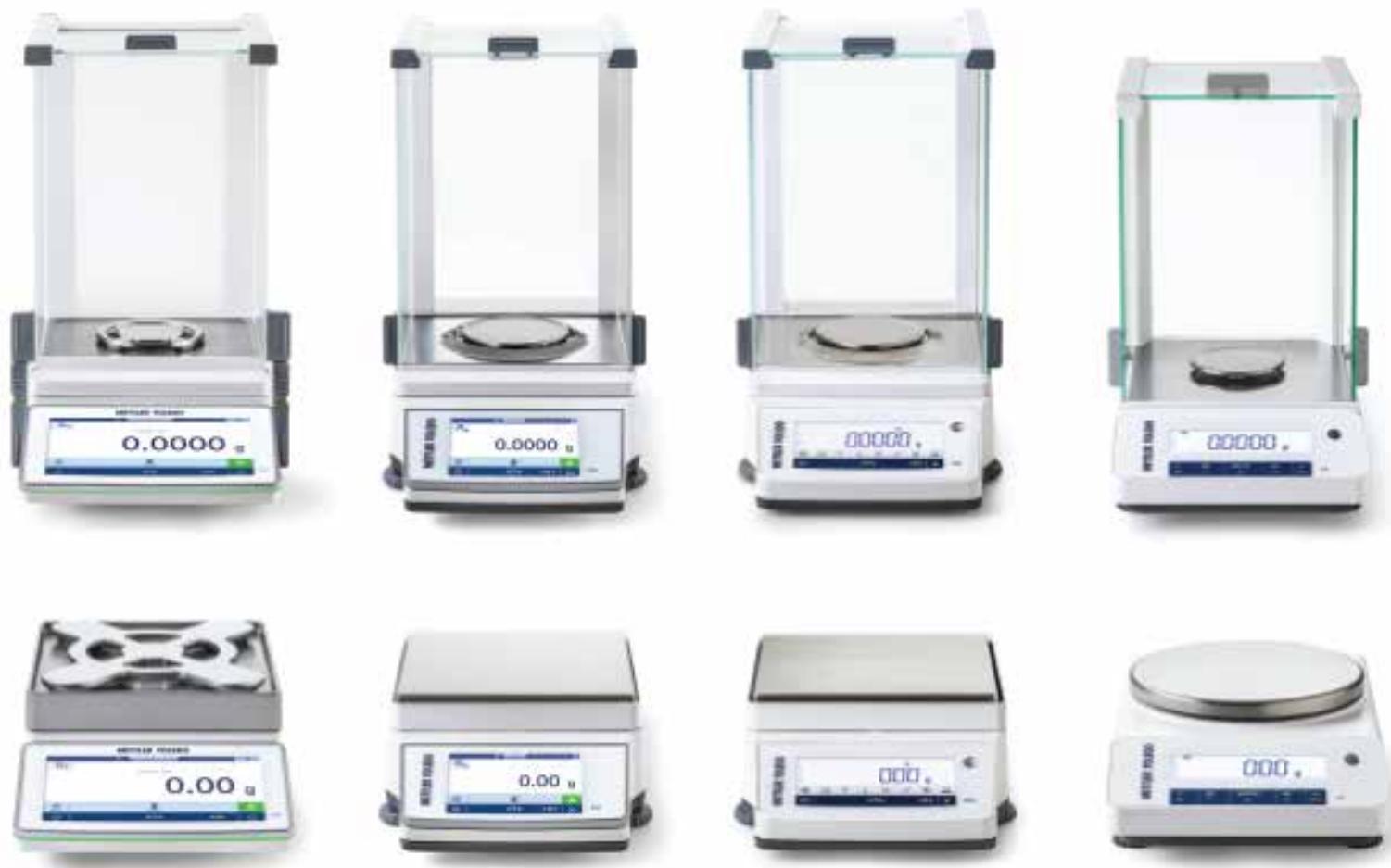


# Liquid Handling Solutions

## Pipette Management

- Pipette Management includes SmartCheck™, a tool that verifies pipette performance in less than 60 seconds.
- SmartCheck measures dispensed volume with three repeats and provides a pass/fail result against pipette tolerances.
- It works with any pipette brand dispensing between 10 µL and 1,000 µL, including individual channels of multichannel pipettes.
- PipetteX™ software automates pipette tracking, usage monitoring, and data collection for asset management.
- PipetteX is brand-agnostic, supporting pipettes from different manufacturers.
- SmartStand serves as a docking and charging station, keeping pipettes organized and ready.
- The system ensures audit readiness by maintaining detailed logs of usage, verification, and calibration.
- Regular SmartCheck use helps identify out-of-tolerance pipettes before critical experiments.
- PipetteX allows scheduling of service, calibration, and maintenance across large pipette fleets.
- Together, SmartCheck, PipetteX, and SmartStand provide a complete life-cycle management solution for pipettes.





# METTLER TOLEDO

## Laboratory Balances

# Laboratory Balances

## Analytical Balances

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- MonoBloc Weighing Cell: A monolithic, micromachined load cell that eliminates mechanical hysteresis and thermal drift to maintain linearity at 0.1 mg or 0.01 mg resolutions.
- FACT Calibration: Employs internal motorized weights to trigger automatic sensitivity adjustments based on real-time temperature deltas and elapsed time intervals.
- StaticDetect Technology: Detects non-gravitational forces caused by electrostatic charges on samples and activates integrated ionizers to neutralize drift before data recording.
- SmartPan Geometry: A specialized grid-style weighing pan that minimizes air turbulence impact, reducing stabilization times and improving repeatability in laminar flow hoods.
- LabX Data Integrity: Supports ALCOA+ standards via bi-directional MT-SICS communication, ensuring automated metadata capture and compliance with FDA 21 CFR Part 11.



## Precision Balances and Scales

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- EMFC MonoBloc Load Cell: A monolithic, single-piece electromagnetic force compensation cell that supports high capacities (up to 64 kg) with precision down to 1 mg.
- SmartPan Technology: A specialized weighing pan that reduces air turbulence, providing up to 2x faster stabilization and improved repeatability in fume hoods.
- FACT Internal Adjustment: Automatically adjusts balance sensitivity using internal weights triggered by ambient temperature deltas or pre-defined time intervals.
- Electronic LevelControl: Built-in sensors continuously monitor the balance's physical orientation and issue visual/acoustic alerts if the unit requires leveling.
- Metrological Connectivity: Utilizes MT-SICS commands for bi-directional data flow to LabX software, ensuring ALCOA+ compliance and digital audit trails.



[www.rotronic.com/rms](http://www.rotronic.com/rms)



**rotronic**

MEASUREMENT SOLUTIONS  
A PST BRAND

# Operational Environment Monitoring Systems

# Operational Environment Monitoring Systems

## Rotronic Monitoring System (RMS)

- The RMS is modular hardware plus web-based software: data loggers record values from both Rotronic and third-party sensors and send to a secure database accessible via PC, Mac, tablet or smartphone.
- Supports multiple deployment modes: on-premise installation, public cloud (SaaS) and exclusive cloud versions with validated environments for regulated use.
- Designed for regulatory environments: compliant with GAMP5 (software category 4, hardware category 1), supports FDA 21 CFR Part 11, EU Annex 11 and EU Annex 15 requirements.
- Provides integration of third-party devices via analog input, MODBUS TCP, JSON API and can export data via CSV, PDF, OPC UA and MS SQL.
- Offers real-time notifications: alarms and alerts can be sent via e-mail, SMS, telephone calls; user configurable for warning vs alarm, delay, hysteresis.
- Built-in audit trail and full data integrity: system logs actions, changes, hardware replacements, calibration data; read/write access only, no delete rights in cloud-hosted mode.
- Scalable from single measurement point installations up to systems with several thousand measurement points across multiple locations.
- Supports measurement of many parameters: temperature, relative humidity, carbon dioxide, oxygen, differential pressure, analog voltages/currents and digital inputs.
- Data loggers available with PoE, 24 V supply and backup battery; wireless versions also offered to reduce cabling and risk of data loss.
- Automated and customizable reporting: functionality includes batch-release reports, deviation reports, calibration/validation reports and mapping reports (e.g., DIN 12880, NF X 15-140, USP 1079, WHO Supplement 8).

**BMS and EMS**

**Environmental Storage**

**Pharmacy & Drugstore**

**Warehouse Monitoring**

**Incubators Monitoring**

**Cold Chains Temperature**

**Food and Tobacco**

**Cleanrooms**

**Cold Storage Temperature**

**Data Center Monitoring**

**Compressed Air Systems**

**IVF Labs**

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