

The Scintica logo is positioned in the top right corner. It features the word "Scintica" in a white, sans-serif font, followed by a yellow double colon symbol (:). The background of the entire page is a deep purple gradient, overlaid with a complex network of glowing white and pinkish-purple nodes and lines, and a pattern of hexagonal shapes that resemble a molecular or crystalline structure.

Scintica:

PRODUCT BROCHURE

Linking scientists with the right precision tools

ABOUT SCINTICA

At Scintica, we focus on providing high-value instrumentation to scientists and the preclinical research community to advance science and medicine.

We are aware of the tremendous amount of information that scientists face when trying to understand which equipment can serve their research needs best, and the difficulties instrumentation manufacturers have in communicating their products and benefits to the research community.

Our strong focus on education within science and the roles that various technologies play in advancing research provides a new medium of communication between scientists, which is most efficient.



OUR MISSION

Our mission is to link scientists with the right research solutions and instruments they need to advance research.



OUR MANUFACTURING PARTNERS



Scintica:

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Ultrasound Imaging

Prospect T1

Compact, high-frequency preclinical ultrasound



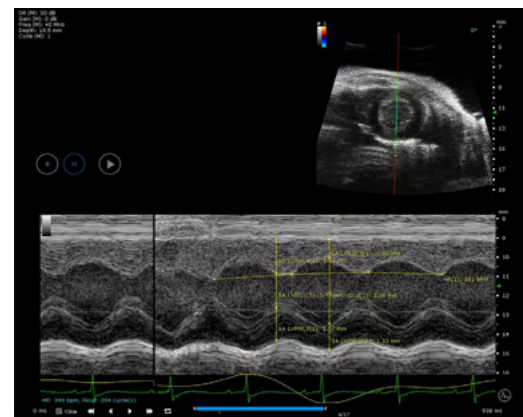
The Prospect T1 is a cost effective high-frequency preclinical ultrasound system for mice, rats and similarly sized animals. This system has been optimized for a variety of imaging applications at the benchtop instead of from inside a core imaging facility. It produces high resolution images providing exquisite details of anatomical structures.

Key Features

- Compact tabletop design
- 3 Transducers are available (20, 40, & 50MHz) for mice & rats, with image resolution as high as 30µm
- Modes include: B-mode, M-mode, Color/Power Doppler, Pulsed Wave and Tissue Doppler, along with contrast imaging (linear and non-linear) capabilities
- Analysis software, available with the system and offline
- Optional add-ons allow for 3D imaging, image guided injections, shear wave elastography, and integration of sonoporation probes

Applications

- Cardiovascular research
- Cancer biology
- General abdominal/ anatomical imaging
- Developmental biology
- Ophthalmology applications
- Zebrafish
- Chick Embryo



Cardiovascular Research: Systolic Function, M-Mode



The Prospect T1 has been specifically designed for preclinical imaging of small animals including mice and rats. These species require very high resolution images (up to 30µm) to observe anatomical structures, and considerations to monitor changes in hemodynamics due to their high heart rates.

DEXA Imaging

OsteoSys

iNSiGHT

Dual energy x-ray absorptiometry system

The iNSiGHT is a fully shielded DXA (DEXA, dual energy x-ray absorptiometry) system, designed specifically for use on preclinical small animal models such as mice and rats. The DXA technology provides quantification of body composition, such as bone mineral density (BMD), and measures of lean and fat mass.

Key Features

- Integrated anesthesia and heated imaging chamber
- Rapid scan times (25 seconds)
- Intuitive acquisition and analysis software is available on the system and for offline analysis
- Minimal radiation dose for image acquisition, allowing for longitudinal studies, with multiple imaging time-points, on the same animal

Applications

- Metabolic Bone Disease
- Arthritis
- Metabolic Disorders
- Musculoskeletal Diseases
- Drug Safety and Toxicology



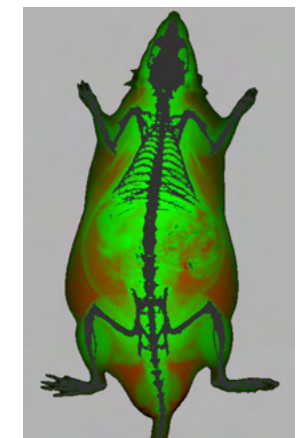
The user-friendly, self-shielded DEXA system has standard electrical requirements allowing it to be easily sited and installed within an existing laboratory space.



X-Ray attenuation



Bone mineral density (BMD)



Lean (green) vs fat (orange) mass

MRI

Imaging

M-Series Compact MRI

Cryogen free MRI for small animals



The cost effective and compact **M-Series** magnetic resonance imaging (MRI) systems generate high resolution 3D whole body, anatomical, functional and molecular images of small animals. These high-performance MRI systems provide powerful results without the cost, complexity, and technical burden of other MRI systems.

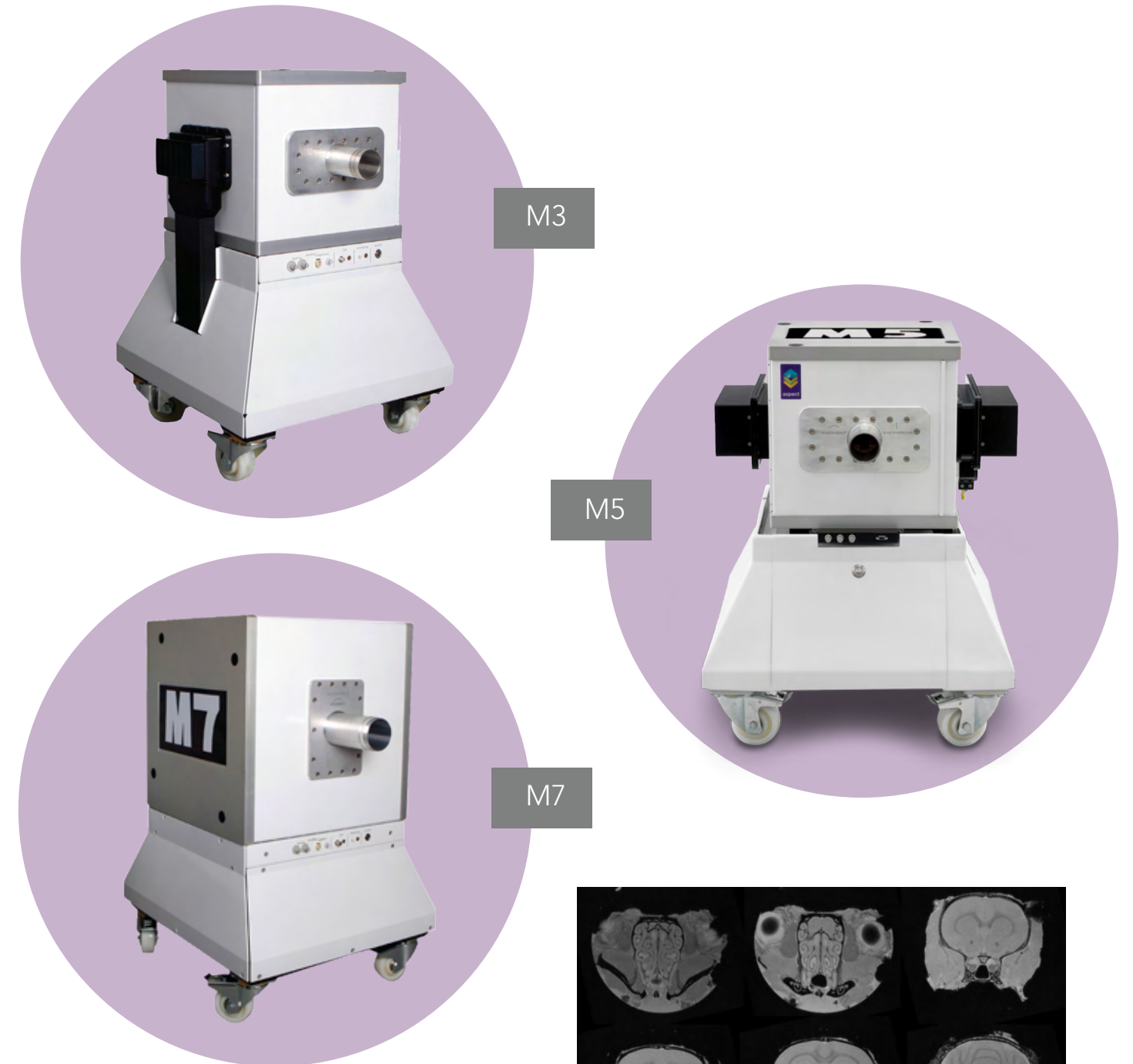
The self-shielded, permanent magnet design of the **M-Series** systems require no additional infrastructure allowing it to be installed within a core imaging lab, animal facility, or existing laboratory right next to other equipment or fixtures.

The animal handling system ensures the stability of the animal throughout the imaging session with easy-to-use fully integrated anesthesia, heating, and physiological monitoring systems.

The **M-Series** product line includes the **M3**, **M5** and **M7**. The difference between the systems is the bore size, which effects the overall size of the system. The **M3**, is a mouse-only system; the **M5** can image mice and rats and the **M7** can image animals ranging in size from mice to 700g rats.

Applications

- Anatomy and Morphology
- Cancer Research
- Neurobiology
- Cardiovascular Research
- Multi-modal Imaging
- Ex Vivo Applications
- Contrast Agent Imaging



High resolution images of an ex vivo fixed rat brain sample

PET/MR Imaging



M7 SimPET

Simultaneous PET/MR Imaging

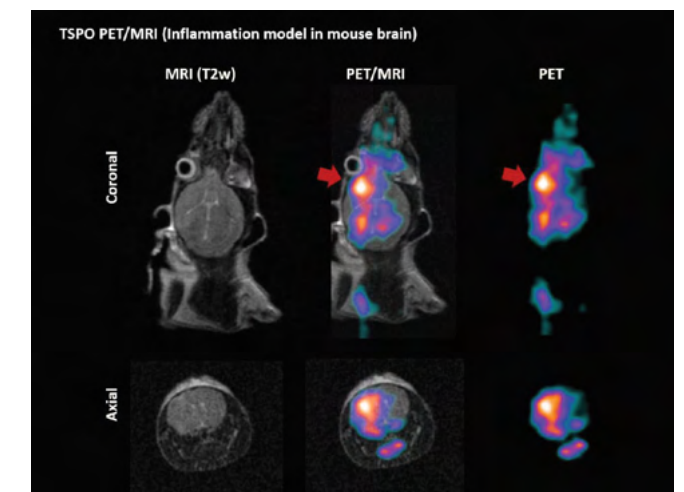
The **M7 SimPET** is a true simultaneous PET/MRI system utilizing the compact, permanent magnet technology in the **M7** and the state-of-the-art **SimPET** insert. This system combines all of the benefits of the **M-Series** high-performance MRI systems with the state-of-the-art **SimPET** insert from Brightonix Imaging.

The **M7 System** from Aspect Imaging is a self-shielded, cryogen free, MRI system that provides optimized imaging protocols for a variety of anatomical targets, providing complementary 3D anatomical images to those acquired using the **SimPET** insert.

The **SimPET "S"** and **"L"** model insert, from Brightonix, have been optimized for use within the **M7 system**. Brightonix created an advanced silicon photomultiplier (SiPM) based PET insert for truly simultaneous PET/MR imaging.

Applications

- Oncology
- Neurology
- Cardiology
- Immunology and Infectious Disease
- Dynamic Imaging
- Bone Studies and Other Diseases



PET/MR imaging: Inflammation model in mouse brain

The SimPET insert has been designed to integrate into the M7 MRI system, creating a truly simultaneous PET/MRI system designed for small animal imaging.

PET Insert Imaging

BRIGHTONIX
I M A G I N G



The SimPET series is an advanced silicon photomultiplier (SiPM) based PET insert for truly simultaneous PET/MR imaging with a compact design and low power consumption, and excellent PET detector stability.

SimPET

PET Imaging - Simultaneous PET/MRI or stand alone PET

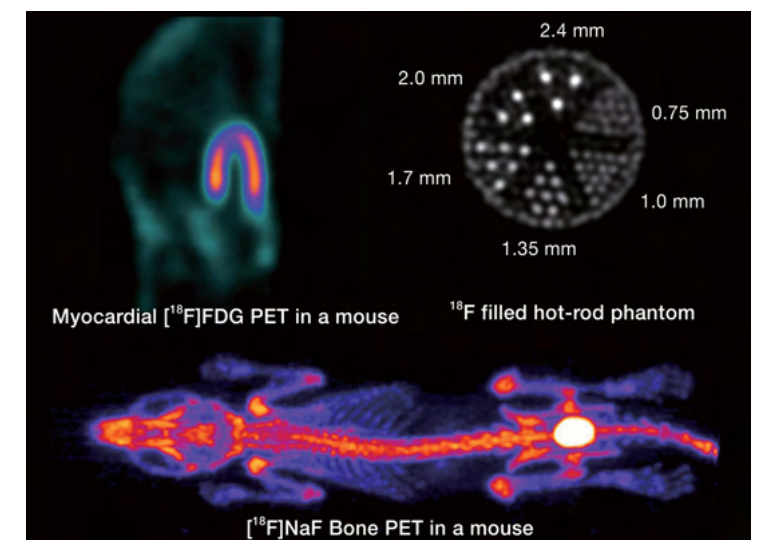
SimPET is a compact and reliable SiPM-based small animal PET imaging system for hybrid MR imaging and standalone use.

The SimPET series is an advanced silicon photomultiplier (SiPM) based PET insert for truly simultaneous PET/MR imaging with a compact design, low power consumption, and excellent PET detector stability, created by Brightonix Imaging.

The insert is optimized for use with some of the most commonly installed superconducting high-field (>3T) MRI systems, found in many preclinical imaging laboratories around the world. In addition to the insert being used with MRI systems, the PET insert can also be used as a standalone PET imaging system if desired.

Applications

- Oncology
- Neurology
- Cardiology
- Immunology and Infectious Disease
- Dynamic Imaging
- Bone Studies and Other Diseases



Myocardial PET in a mouse; F filled hot-rod phantom; Bone PET in a mouse

PET/CT Imaging

SuperArgus

Preclinical PET/CT imaging

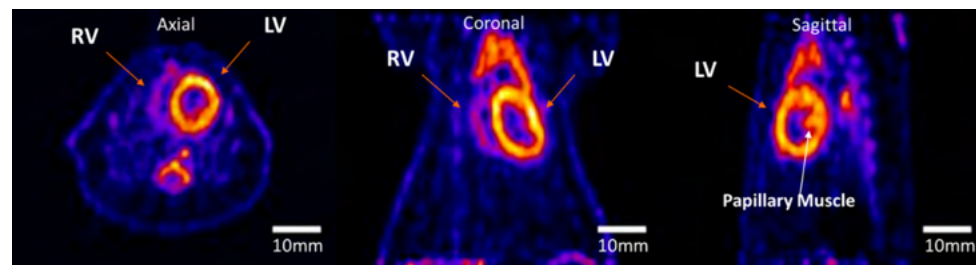
The SuperArgus preclinical imaging system can be configured as a PET-only or PET/CT system. There are three models available: **r** – 100mm bore for mice, rats or marmosets up to 3kg; **R** – 160mm bore for multi-animal imaging, and rabbits up to 6kg; and **P** – 260mm bore for non-human primates, canine or porcine up to 10kg. Each model can be configured with 2, 4, or 6 PET rings.

Key Features

- Deep tissue imaging, superior sensitivity for 3D localization of anatomical, functional and molecular data
- Integrated anesthesia and temperature control
- Designed for novice and advanced users
- Real-time imaging allows for conscious/awake imaging

Applications

- Oncology
- Neurology
- Cardiology
- Immunology and Infectious Diseases
- Dynamic Imaging
- Bone Studies
- Conscious/Awake Imaging
- Multiplex PET



The difference in metabolic activity between the left and right ventricular wall



The SuperArgus PET/CT is a fully functional integrated system combining modern technologies for both PET and CT, providing molecular imaging on a wide variety of preclinical animal models.



Compact PET & CT Imaging

Argus Compact PET & Compact CT

Preclinical PET or CT imaging systems for small animals

The Compact PET System and CT systems incorporate the same state-of-the-art detectors and electronics as the SuperArgus Systems. The compact systems have a bore size of 55mm making it ideal for mouse imaging. There is a common bed to transport the animal between imaging systems if the researcher is looking to co-register the images.

Key Features

- Both systems include an integrated anesthesia and temperature control system.
- Compact PET
 - Dual-layer phoswich detector provides true depth of interaction (tDOI), this provides sub-millimeter resolution, with uniformity across the entire field of view
 - High sensitivity with a wide dynamic range; allowing for both low and high dose studies
- Compact CT
 - CMOS flat panel detector along with microfocus x-ray source and scintillator plate provide high resolutions images
 - Rapid acquisition as fast as 15 seconds for a whole body scan

Applications

- Oncology
- Neurology
- Cardiology
- Immunology and Infectious Diseases
- Bone Studies and Other Diseases



The Compact PET system is a 4 ring system, including 32 tDOI phoswich detectors, with an axial field of view of 45mm, and a trans-axial field of view of 100mm. This system has been designed to minimize the radiation exposure, making it ideally suited for longitudinal imaging studies.



Ultrasound Imaging

The Prodigy

Compact and high-performance ultrasound system designed for engineering research



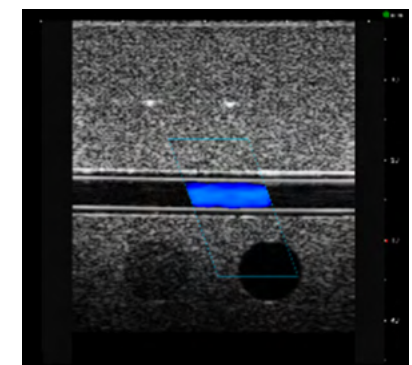
The software provides a variety of measurement tools for all the various image modes. These tools include measurements of geometry, displacement, velocity, acceleration, and heart rate.

The Prodigy is a compact, high-performance ultrasound system optimized for a variety of ultrasound research applications. There are 2 available configurations within the Prodigy architecture; one with 128 channels and the other with 256 channels, both transmit and receive. Connectors can be freely switched using multiplexers so the maximum supported transducer channel is up to 512. The Prodigy supports many ready-for-use image modes including basic modes (B / Color / PW / M / PS / SA) and advanced modes (trapezoidal or steerable scanning / multi-beam / multi-focus / spatial compounding / coded excitation / harmonic imaging / triplex / duplex). All modes have been fully optimized and can be used without fine-tuning parameters.

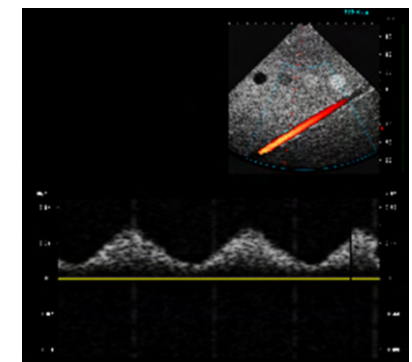
The Prodigy also provides a special pulse-sequence mode with a well-developed user interface, in which the user can program their own transmit and receive parameters or sequences.

Key Features

- All-in-one design with 3 transducer connectors
- Fully programmable architecture
- Intuitive user interface
- Pulse sequence mode
- Measurement tools



Doppler Mode is available on the Prodigy system



PW Doppler Mode is available on the Prodigy system, it may be used to assess flow velocities as a function of time

Microbubble Contrast Agents

USphere

Microbubble contrast agents for ultrasound imaging



The USphere series of microbubble contrast agents have been specifically designed for use in a variety of species used in preclinical research (from mice to pigs) and may be used with ultrasound systems operating at 1 to 40MHz, including the Prospect T1. Microbubble contrast agents can be used to visualize perfusion in a wide variety of imaging targets including tumors, abdominal organs, etc. and may be relevant from basic research studies to translational drug development projects.

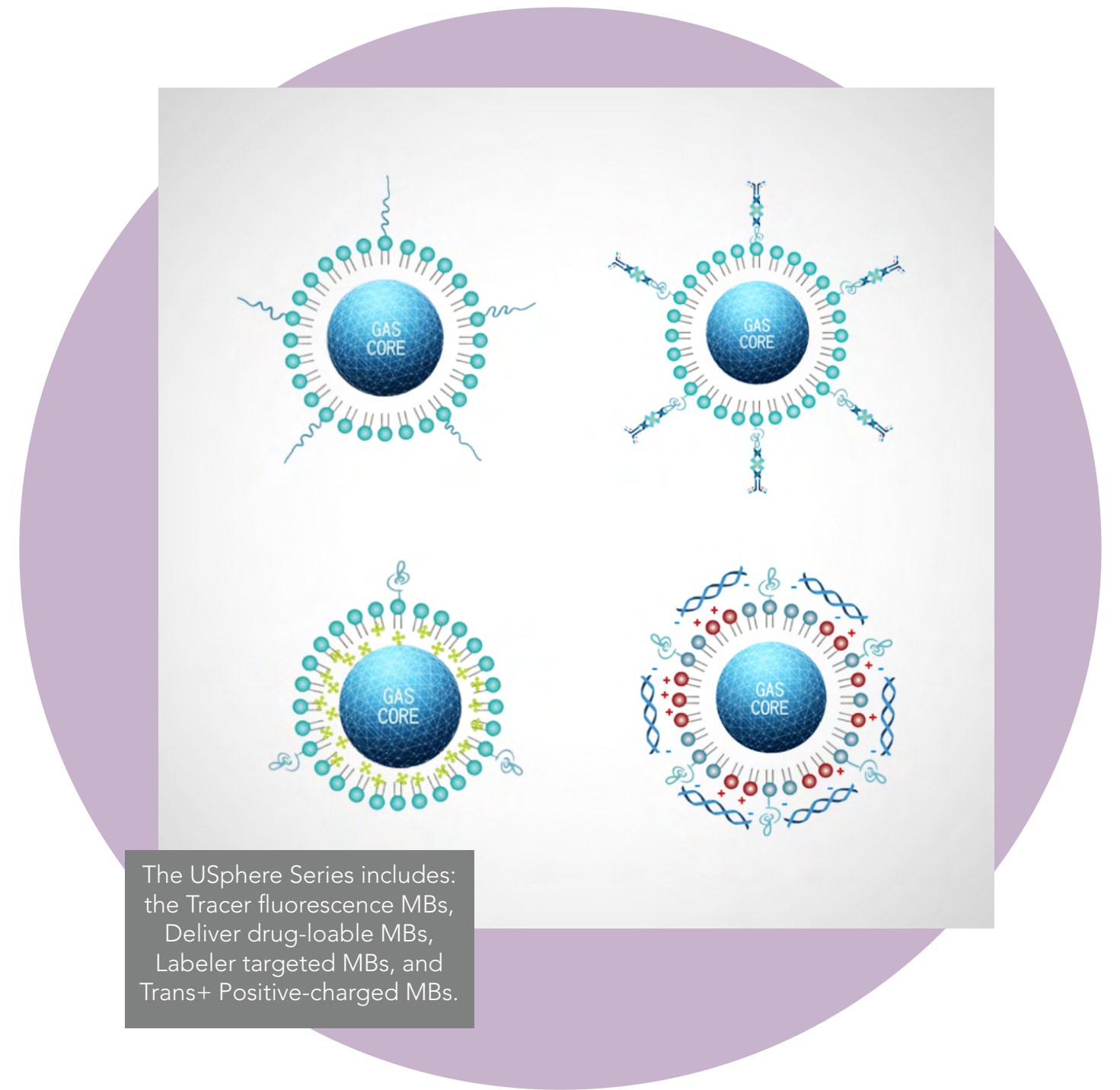
The USphere line of microbubbles have been designed for use in a wide variety of applications, in any sized preclinical research model. Plain microbubbles, fluorescently labeled or not, may be used to study perfusion; while target-ready microbubbles may be used to detect specific biomarker on the endothelial cell wall. Finally, +vely charged microbubbles may be used to deliver a payload of RNA or DNA for gene transfection at a specific site.

Key Features

- Specifically designed for preclinical research
- Work effectively at frequencies from 1 to 40MHz
- Small size distribution (1.1 – 1.4µm)
- Concentration optimized for small animal imaging (~2.5x10¹⁰ bubbles/ml), requiring lower injection volumes
- Stable for up to 3 days once activated

Available Types

- Plain microbubbles
- Fluorescently labeled plain microbubbles
- Target-ready microbubbles
- Fluorescently labeled, target-ready, microbubbles
- Positively charged microbubbles, for DNA/RNA transfection



The USphere Series includes: the Tracer fluorescence MBs, Deliver drug-loadable MBs, Labeler targeted MBs, and Trans+ Positive-charged MBs.

Photoacoustic Imaging

TriTom

Small animal whole body photoacoustic fluorescence tomography (PAFT)



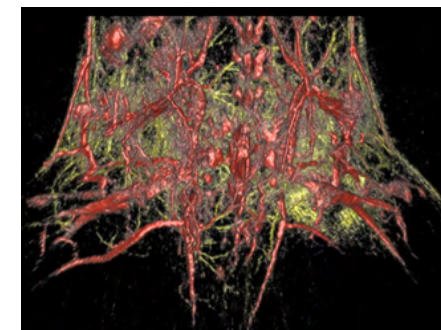
TriTom can provide and co-register multi-modal data within the same subject, critical to understanding the biological mechanisms that underlie many diseases and potential therapies.

The TriTom platform is based on Photoacoustic Fluorescence Tomography (PAFT) technology that provides unparalleled capabilities for whole body imaging and *in vivo* characterization of small animal models. Complementary 3D imaging modalities are integrated into a single powerful instrument by enabling co-registered Photoacoustic Tomography and Fluorescence Molecular Tomography.

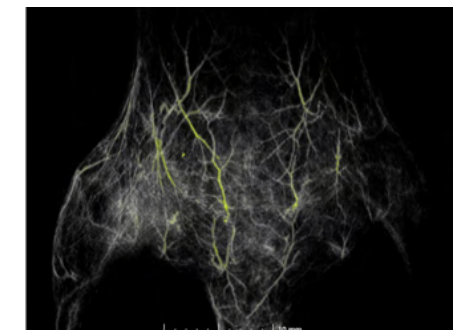
Combining high-resolution photoacoustic imaging with high contrast fluorescence optical tomography allows deep tissue imaging, superior molecular sensitivity, and 3D localization of anatomical, functional, and molecular data. Utilizing an innovative and compact design, simultaneous co-registration of orthogonal photoacoustic and fluorescent optical data can be acquired. The platform provides high-resolution robust anatomical registration of optical biomarkers while maintaining high molecular sensitivity. TriTom has a broad spectrum of preclinical research applications ranging from cancer, toxicology, developmental biology to tissue engineering and regeneration.

Applications

- Cancer
- Biology
- Toxicology
- Developmental Biology
- Neuroscience
- The morphology of internal organs
- Non-contrasted angiography
- Stem cell research
- The development of contrast agents



TriTom composite 890 nm + 532 nm imaging of a live mouse vasculature



Maximum intensity projection (532nm excitation)

Optical Imaging

Newton 7.0

Optical: fluorescence, bioluminescence and 3D tomography



Various bioluminescent and fluorescent reporters can be used to visualize and track tumours, disease or inflammation development, target molecules or follow biodistribution and pharmacokinetics in a noninvasive manner.



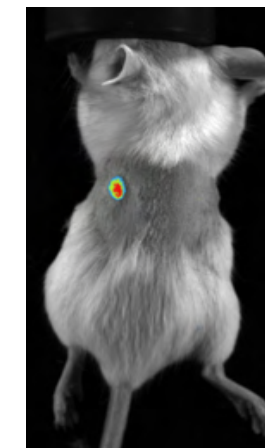
The **Newton 7.0** is a highly sensitive optical imaging system dedicated to preclinical imaging of small animals. The systems are ideal for *in vivo*, *ex vivo* and *in vitro* imaging applications, allowing for simultaneous imaging of multiple animals or samples at the same time. The Newton 7.0 systems are capable of bioluminescence, fluorescence as well as 3D tomographic imaging. Along with the best optics and animal handling features for high quality scientific images and results, its software is easy to navigate and optimized for novice and experienced users alike.

Key Features

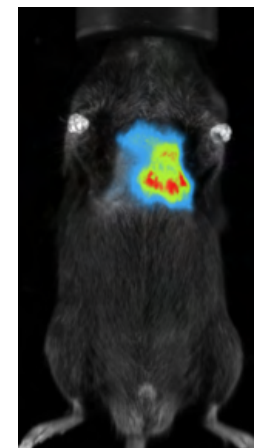
- Fluorescence, Bioluminescence, and 3D Tomography
- Feature-rich acquisition and analysis software, which is easy to use
- Up to 5 mice or 3 rats imaged simultaneously
- 4.6MP camera provides high quality images
- State-of-the-art detectors and front illuminated camera provides enhanced sensitivity and wide dynamic range

Applications

- Oncology
- Immunology
- Infectious Disease
- Neurology
- Biodistribution



Subcutaneous tumor expressing mCherry



Orthotopic lung tumors expressing firefly luciferase

Gel Documentation

VILBER Gel Documentation

Laboratory standard for DNA and RNA gel imaging



VILBER Gel Documentation systems are the ideal imaging platform for any lab or core facility. The Super-Bright UV illumination and filter technology enhances the image quality especially for DNA and RNA gels. The compact darkroom is made entirely of stainless steel and aluminium.

Fluorescence is the main method used for gene expression and protein detection. The fluorophore absorbs the excitation light, reaching a higher energy state. By returning to it's former state, it emits fluorescent light. The aim of the imaging system is to separate the emitted light from the excitation light in order to obtain a high quality image.

VILBER Doc-Print CX3



- ➔ Gel Documentation only
- ➔ 20 Megapixels
- ➔ All-in-one PC + Touch Screen

VILBER Bio Print CX4



- ➔ Gel Documentation only
- ➔ 7.6 Megapixels
- ➔ PC Based

VILBER E-Box CX5



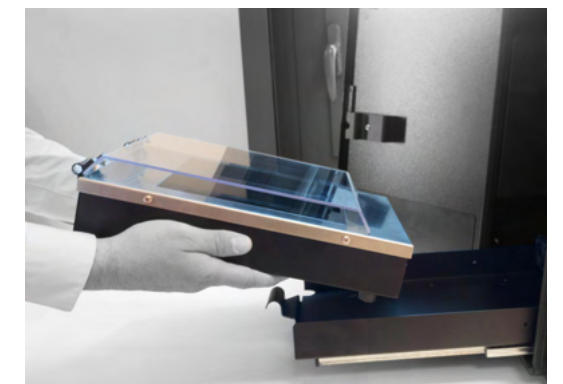
- ➔ Gel Documentation
- ➔ Can be upgraded anytime to cover multiple imaging applications (i.e. fluorescence)
- ➔ 20 Megapixels
- ➔ 12.6" Touch-Screen PC
- ➔ Magnesium reinforced protective glass

VILBER Quantum CX5



- ➔ Gel Documentation
- ➔ Can be upgraded anytime to cover multiple imaging applications (i.e. fluorescence)
- ➔ 20 Megapixels
- ➔ PC Based

VILBER The PadBox is a slide-out container which can welcome several light sources for excitation in the UV, blue, green, and red spectrums. As gel documentation moves from single UV excitation source to a wide variety of lighting options, the PadBox concept meet the need for accommodating into one device several interchangeable light sources.



Fluorescence and Chemiluminescence Imaging

Fusion

Fluorescence and chemiluminescence Western Blot systems



VILBER Fusion FX7



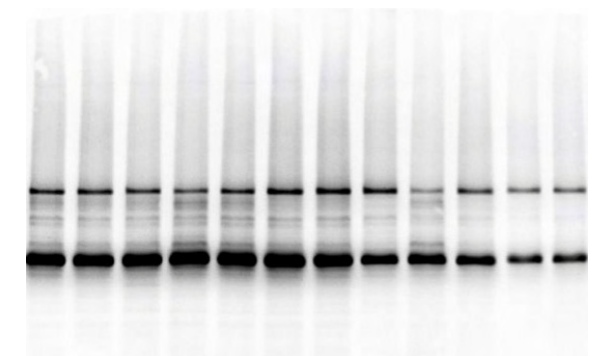
VILBER Fusion Solo S6

The VILBER Fusion line of systems are ideal for quantification grade imaging. Chemiluminescent Western blot data poses distinct challenges in producing quantifiable and reproducible data. Most of these issues are a result of low-dynamic range of detection and difficulty in accurately determining the limit of detection. Fusion systems eliminate all these issues thanks to a High Sensitivity Reading (HSR) camera technology that delivers reliable dynamic range, linearity, and unsurpassed sensitivity for the lowest limit of detection. The advanced camera technology reduces noise allowing faint signals to stand out from the surrounding background.

The Fusion systems can deliver consistent and reproducible data, independently of a chemiluminescence time course. The chemiluminescence intensity/time profile consists of an initial rise period up to a prolonged emission at a pseudo-plateau level and a decline. VILBER Fusion Automatic imaging mode compensates the time course of the chemiluminescence reaction by adjusting the exposure time while maintaining the larger possible image dynamic.

Applications

- Chemiluminescence and fluorescence
- Western, Northern or Southern blot
- DNA and RNA gels and fluorescence stain imaging with UV-Pad or Blue-Pad
- Colorimetric stained protein gels, X-Ray film, autorads, SSCP gels, colony dish and flask imaging with WhiteLight-Pad or UV-Pad + conversion screen

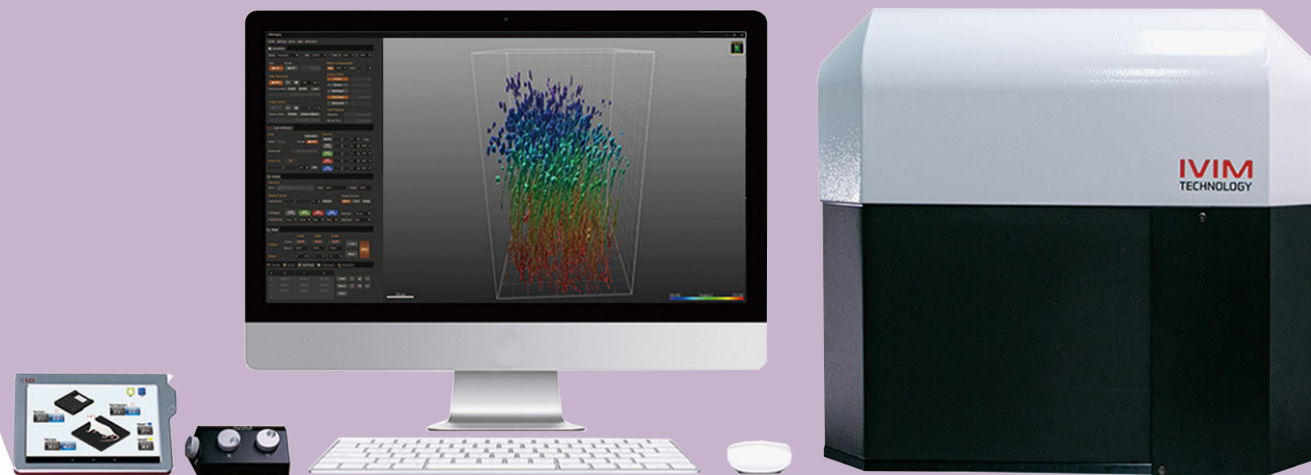


The Fusion systems provide the ultimate sensitivity for chemiluminescence imaging

IntraVital Microscopy



Intravital microscopy enables dynamic, 3D, cellular-level imaging of various biological processes *in vivo*. It enables scientists to directly verify hypothesis derived from *ex vivo* or *in vitro* observations in natural physiological *in vivo* micro-environments.



IntraVital Microscopy (IVM)

All-in-one in vivo IntraVital Microscopy

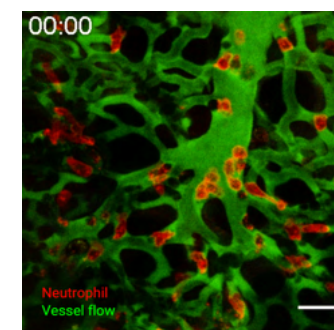
IntraVital Microscopy is an all-in-one confocal/two-photon microscopy system designed and optimized for longitudinal imaging of live animal models *in vivo*. This is the first all-in-one intravital microscopy platform that can explore complex dynamic behaviors of numerous cells in a living body and serve as a next-generation core technology to elucidate unknown pathophysiology of various human diseases. Confocal capabilities of the IVM system enables optical sectioning of *in vivo* tissue via rejection of out-of-focus fluorescence light coming from the background tissue which will result in images with high contrast and quality. In addition to confocal, IVM systems are equipped with two-photon lasers which use longer-wavelength near-infrared (NIR) fs-pulse excitation capable of deep tissue imaging as well as label-free, non-linear multi-harmonic generation imaging (SHG, THG).

Key Features

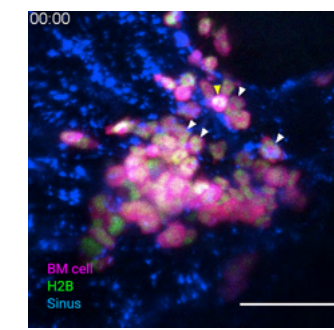
- ➔ Built-in motion compensation for improved image quality
- ➔ Fully integrated anesthesia, body temperature monitoring & regulation
- ➔ Ultrafast image acquisition to capture real-time fast-moving objects
- ➔ Custom-made implantable imaging window chambers

Applications

- ➔ Drug and therapeutic agent delivery and efficacy
- ➔ Imaging of most organs
- ➔ The progression and regression of tumors, cancer models
- ➔ Regeneration and repair in various tissues and organs
- ➔ Infection and immune response in various disease models



Intravital imaging of immune cell dynamics in Lung



In vivo visualization of Hematopoietic Stem Cells in bone marrow.

*Scale bar: 50 μ m

Perfusion Imaging

RFLSI III

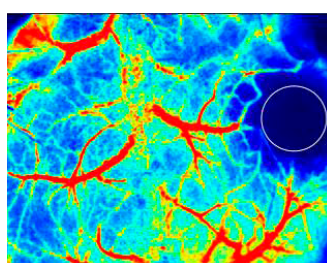
Laser speckle imaging system

The RFLSI III Laser Speckle Imaging System is based on LSCI (Laser Speckle Contrast Imaging) technology. With the advantages of its non-contact, high time resolution, high spatial resolution, and full-field rapid imaging, it provides a real-time dynamic blood flow monitoring and recording method for research in life sciences.

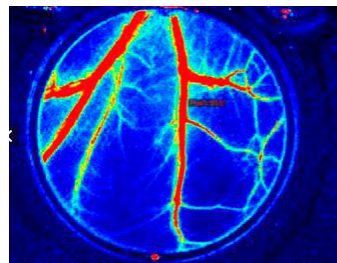
The RFLSI III's high-definition and high-speed camera allows recording of minute details and changes in the micro-circulation in microns and milliseconds. The all-in-one design improves the tolerability for the user.

Applications

- Vascular regeneration
- Brain function and brain injury research
- Cerebral blood flow imaging related to cerebral cortex, physiology, and pathology
- Circulation and metabolism
- Animal models of pathology *in vivo* imaging
- Study of intestinal mucosal blood vessels
- Study of lower limb ischemia and vascular survival in rats and mice
- Study of cortical diffusion inhibition



Cortical blood flow after mini-stroke



Normal cerebral blood flow distribution

RWD



The RFLSI III Laser Speckle provides continuous imaging, offering high time, spatial resolution, high contrast. Along with this, it has a multi-media output of video, image, blood-flow data, and diameter analysis with minimal invasiveness.

Confocal Microscopy

FIVE2 (ViewnVivo)

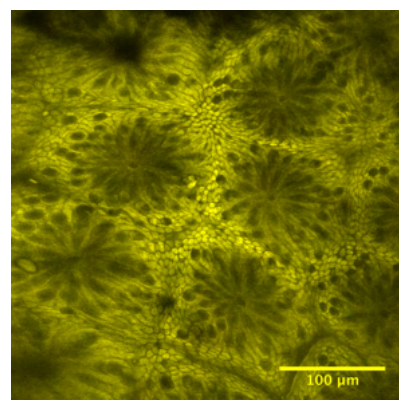
Fluorescence Endomicroscope

The FIVE2 (ViewnVivo) B30 is the latest miniaturized fluorescence endomicroscope from Optiscan, optimized for real-time Preclinical Research *in vivo* imaging in animal models. And while the FIVE2 (ViewnVivo) B30 comes to life *in vivo*, there is no reason why it can not be used for *ex vivo* research as well. Combining all that is required to get you started, the FIVE2 (ViewnVivo) B30 will have you capturing stunning and unparalleled images immediately.

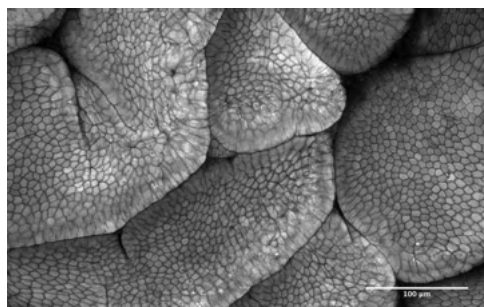
Embedded within the tip of the miniaturized probe is a complex mechanical scanner, comprising a pair of lenses that focus the laser at the exact depth required. The laser is delivered, and the returning light is captured through a single optical fibre that is moved across the field of view (scanning) to capture the entire image. The system controls the speed at which the optical fibre scans, and can be adjusted accordingly along with the power of the laser, to provide optimal results.

Key Features

- Confocal Processor
- Animal Handling Stage and Probe Positioner
- Miniaturised Probe
- Client PC, Monitor, Keyboard and Mouse
- Optiscan Imager
- 3D Visualization and Analysis Software



Normal colon



Dog stomach



FIVE2 (ViewnVivo) is a miniaturized fluorescence endomicroscope platform that brings the next generation of Optiscan's incredible imaging capability and flexibility to preclinical research.



VivoQuant

Quantitative analysis for discovery and post-processing software suite for image data

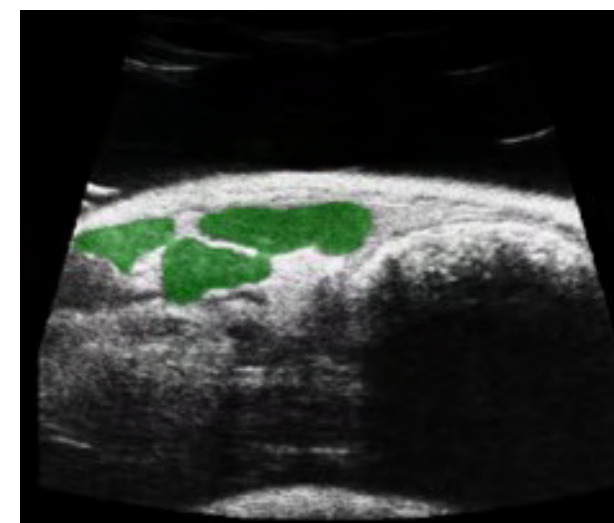
VivoQuant is Invicro's quantitative image analysis platform. As a vendor neutral software product, VivoQuant streamlines image analysis research studies across all phases of drug discovery and development, supporting multi-modality and multi-species image processing applications. VivoQuant combines essential viewing functionality with powerful tools for fine-tuning images, isolating and analyzing regions of interest, and more.

Key Features

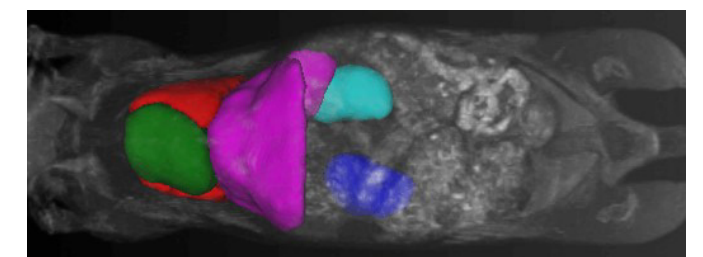
- Multiple Image Formats
- Multimodality Image Registration
- ROI Segmentation
- Data Publication
- Workflow Automation & NAtch Image Processing
- Data Management



Developed by scientists for scientists, VivoQuant is a robust and flexible visualization and quantitative analytic software program. VivoQuant addresses the needs of the imaging research community and solves common pain points in preclinical and clinical image analysis workflows.



VivoQuant was used to segment this complex tumor within the abdomen of the mouse (SKOV-3 cells injected IP), the calculated volume was 16.0mm³



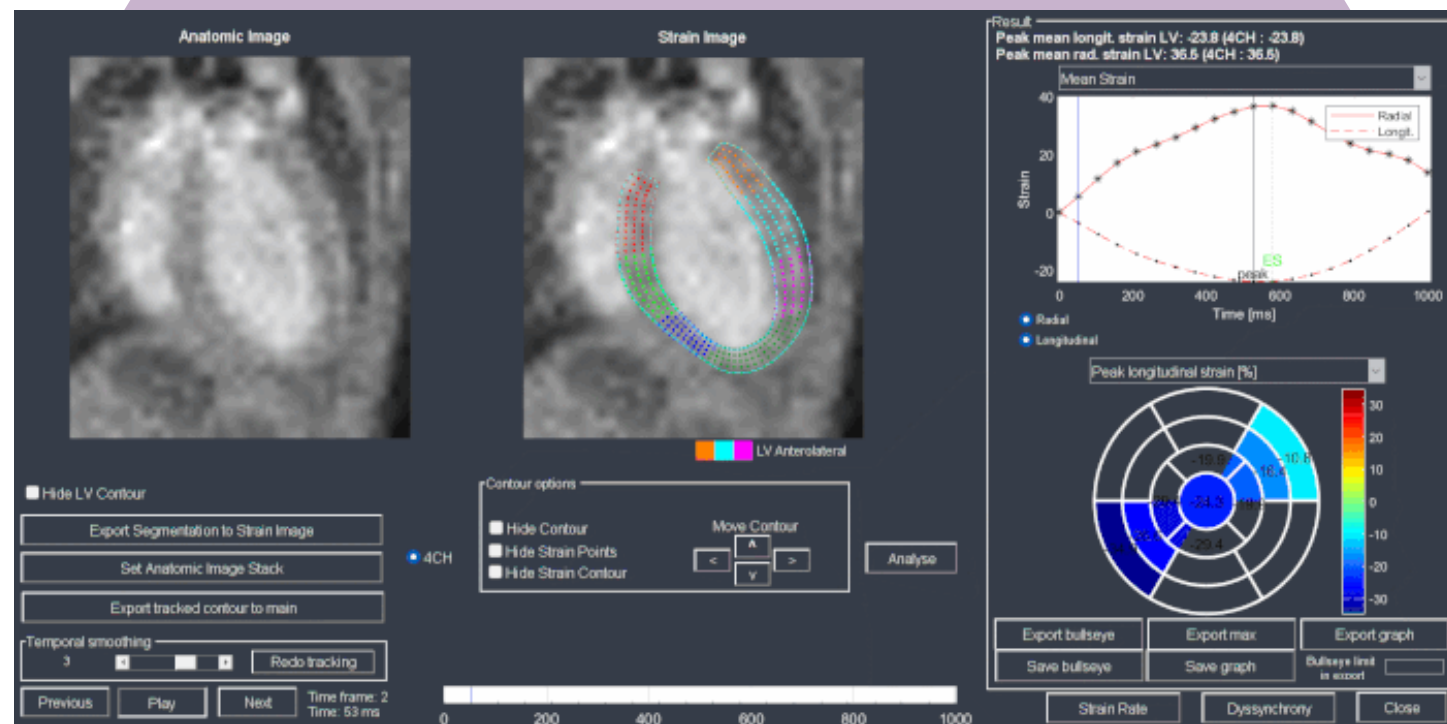
VivoQuant was used to segment various organs on the whole body imaged acquired with the M-Series compact MRI: lungs (red), heart (green), liver (purple) and kidneys (blue and turquoise)



The Segment

A comprehensive software solution for quantitative cardiac MR image analysis

The Segment application is a comprehensive software solution for quantitative cardiac MR image analysis; the software has been specifically designed for use in preclinical research and will work with images acquired on our M-Series MRI systems. The Segment tool employs advanced artificial intelligence (AI) algorithms to facilitate faster analysis of both left ventricle (LV) and right ventricle (RV) functions. In addition to systolic functional analysis, Segment has optional modules for delayed contrast-enhanced imaging with automatic scar segmentation, strain analysis, and many other tools.



The basic Segment software package allows you to perform LV and RV Dimensional Analysis, providing measures of cardiac function including stroke volume, ejection fraction, end diastolic/systolic volumes, etc. The advanced AI algorithms help the user to automatically detect the ventricular borders, while a variety of tools exist to adjust when needed.

Key Features

- ➔ Comprehensive set of image analysis tools
- ➔ Advanced AI algorithms for detecting ventricular borders
- ➔ Batch export from multiple files
- ➔ Data export to .csv files
- ➔ Movie and still image export
- ➔ Patient database
- ➔ PACS integration (optional)

Applications

- ➔ Systolic Function: the basic Segment software allows you to perform dimensional analysis on both the left and right ventricles.
- ➔ The Strain Analysis Module can be used with both CINE images, for feature tracking, along with tagged MR images as well.
- ➔ The Viability Analysis Module is used to automatically segment the scar in a myocardial infarction model, and to define the area at risk, or the transmural area.

Biofabrication

Bioprinter

NGB-R

Next-generation laser assisted 4D bioprinting

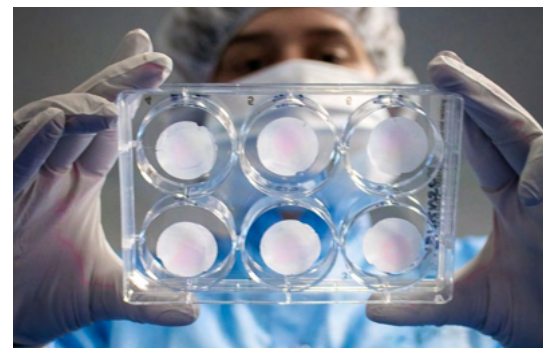
The NGB-R is a multimodal, 4D bioprinting system developed and designed specifically for tissue engineers, researchers, and biologists. Combining laser-assisted, micro-valve, and extrusion bioprinting, the NGB-R enables true versatility of bioprinting (from cells to spheroids) and offers the possibility of using a large number of biomaterials and hydrogels. The NGB-R also includes an embedded microscope for in-line cell printing monitoring and relies on a complete software suite for managing bioprinting protocols, from biological CAD to data analysis of manufacturing.

The NGB-R enables true versatility of bioprinting (from cells to spheroids) and offers the possibility of using a large number of biomaterials and hydrogels to achieve unparalleled technical capabilities including:

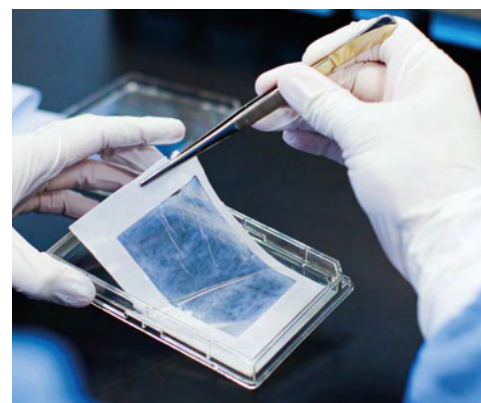
- Cell resolution: 1 to 100 cells per droplet
- Printing speed: 10,000 droplets per second
- Precision: 10 μ m
- Droplet volume: from pL to nL

Multimodal Capabilities

- Laser-assisted bioprinting
- Micro-valve based printing
- Extrusion based printing



Full-thickness skin tissue bioprinted using NGB-R



3D bioprinted dermis

 poietis



The NGB-R integrates automation and robotics, along with numerous in-line sensors, including cell microscopy to ensure consistent reproducible results. It integrates a number of bioprinting techniques, including laser-assisted, bio-extrusion, and micro-valve options. Combined this makes the NGB-R a world's first in the bioprinting market.

Cardiovascular Monitoring

Doppler Flow Velocity System (DFVS)

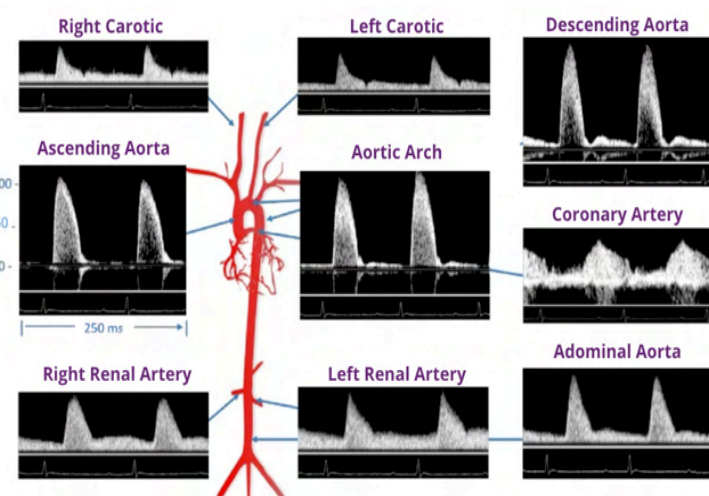
Non-invasive measure of cardiovascular physiology

The Indus Instruments Doppler Flow Velocity System is a proven and cost-effective alternative to conventional imaging systems. Small handheld probes easily and reliably measure blood velocity in the heart and the arteries of rodents, fish and other animal models making serial studies of cardiac and arterial function available to more labs than ever before. Pulsed wave Doppler signals from the transceiver are digitized at a high sampling rate and sent to the workstation display.

With a proven track record of more than 100 publications, The Indus DFVS is an important instrument for any cardiovascular lab. It can be used as an alternative to complex, invasive surgical models and offers blood flow velocity measurements and functional calculations not possible with traditional imaging systems with their larger probes.

Applications

- ➔ Cardiac Function: Systolic and Diastolic
- ➔ Coronary Flow Reserve
- ➔ Arterial Stiffness (Pulse Wave Velocity)
- ➔ Pressure-Overload (Stenosis)
- ➔ Peripheral Artery Disease and Perfusion



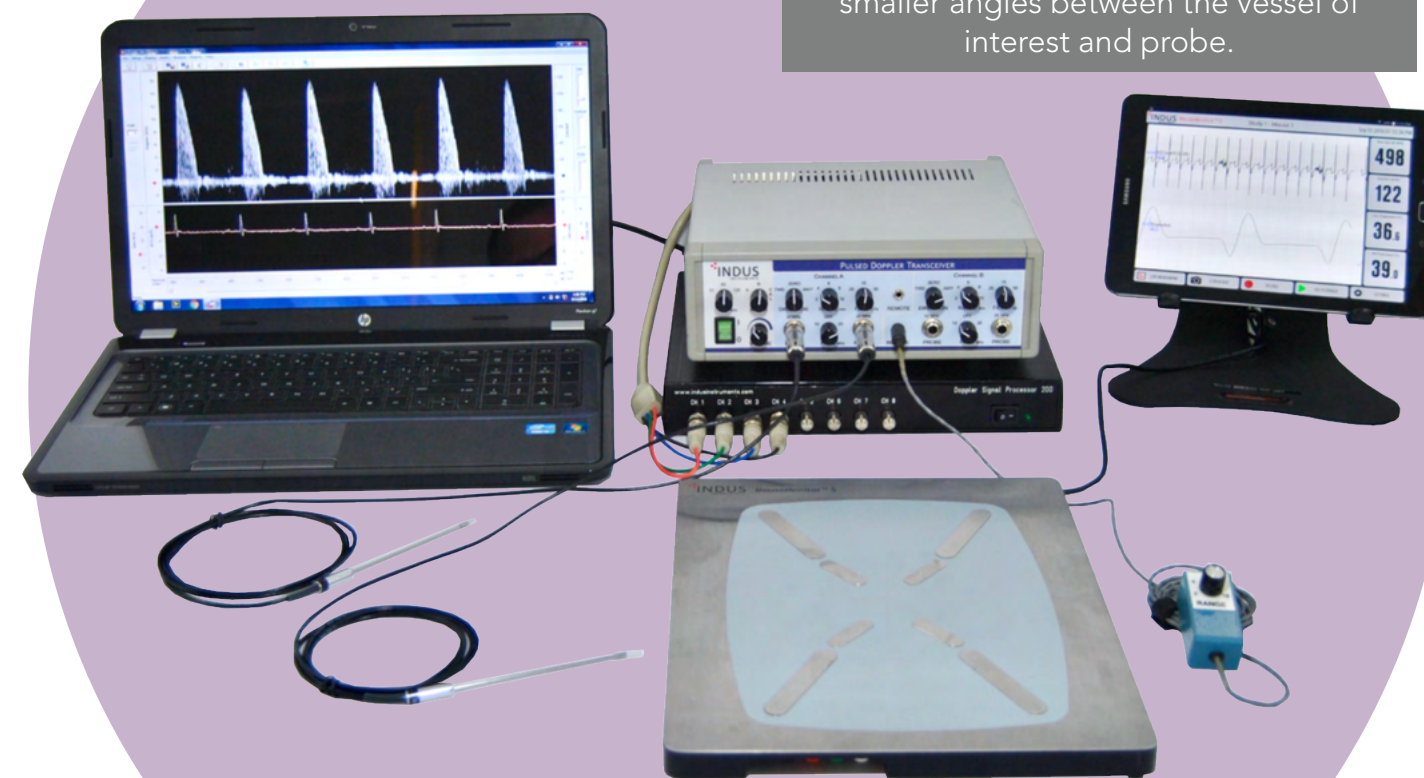
Small System Footprint Takes Up Minimal Lab Space

This powerful system is both compact and easily transportable, allowing it to be shared between cooperating labs with ease. The noninvasive approach to flow measurement often reduces the time associated with laboratory protocols, compliance and time required to generate meaningful data.

Can be packaged with RSM



The DFVS is a valuable tool for those who already use ultrasound in their research. Pulse wave velocity and peripheral vascular measurements are more suited for a dedicated Doppler system due to the smaller probe size, allowing for smaller angles between the vessel of interest and probe.



Animals Models

Surgical Monitoring

Rodent Surgical Monitor⁺ (RSM⁺)

Integrated surgical warming and vital signs monitoring



The Indus Instruments Rodent Surgical Monitor⁺ is an advanced, integrated surgical warming and vital signs monitoring solution for preclinical research in mice, rats and other small animals. The system provides detailed information, in real-time, regarding subject body temperature, ECG, heart rate, pressure and respiration. The system incorporates intelligent zone heating, ultra-low noise, high-resolution ECG electronics, noninvasive electrodes and a port for external needle electrodes for when subjects cannot be laid prone or supine.

Standard set-up

- Touchscreen Display Unit
- Heated Surgical Platform
- Temperature Probe

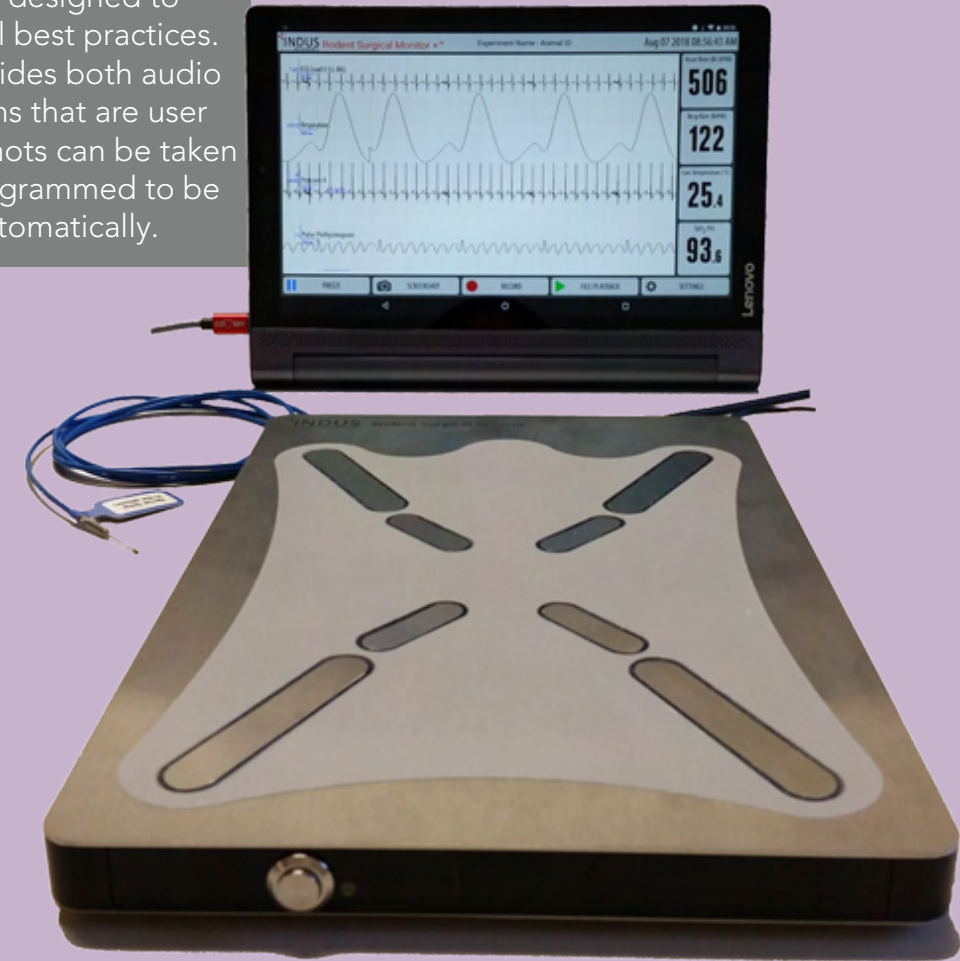
Parameters monitored

- Surgical platform temperature (°C)
- Core body temperature (°C)
- Heart rate (HR:BMP)
- Respiration rate (RR:BrPM)
- ECG (options for Lead I, Lead II, Lead III, aVR, aVL, aVF), optional use of ECG needles
- Optional: Blood oxygen saturation (SPO2 %)
- Optional: Pressure (mmHg)



Customizable display of vital sign waveforms and measurements

The surgical-grade stainless steel operating platform is easy to clean and disinfect, designed to support surgical best practices. The system provides both audio and visual alarms that are user defined. Screenshots can be taken manually, or programmed to be acquired automatically.



**Can be packaged with DFVS*

Telemetry Systems

Indus Telemetry

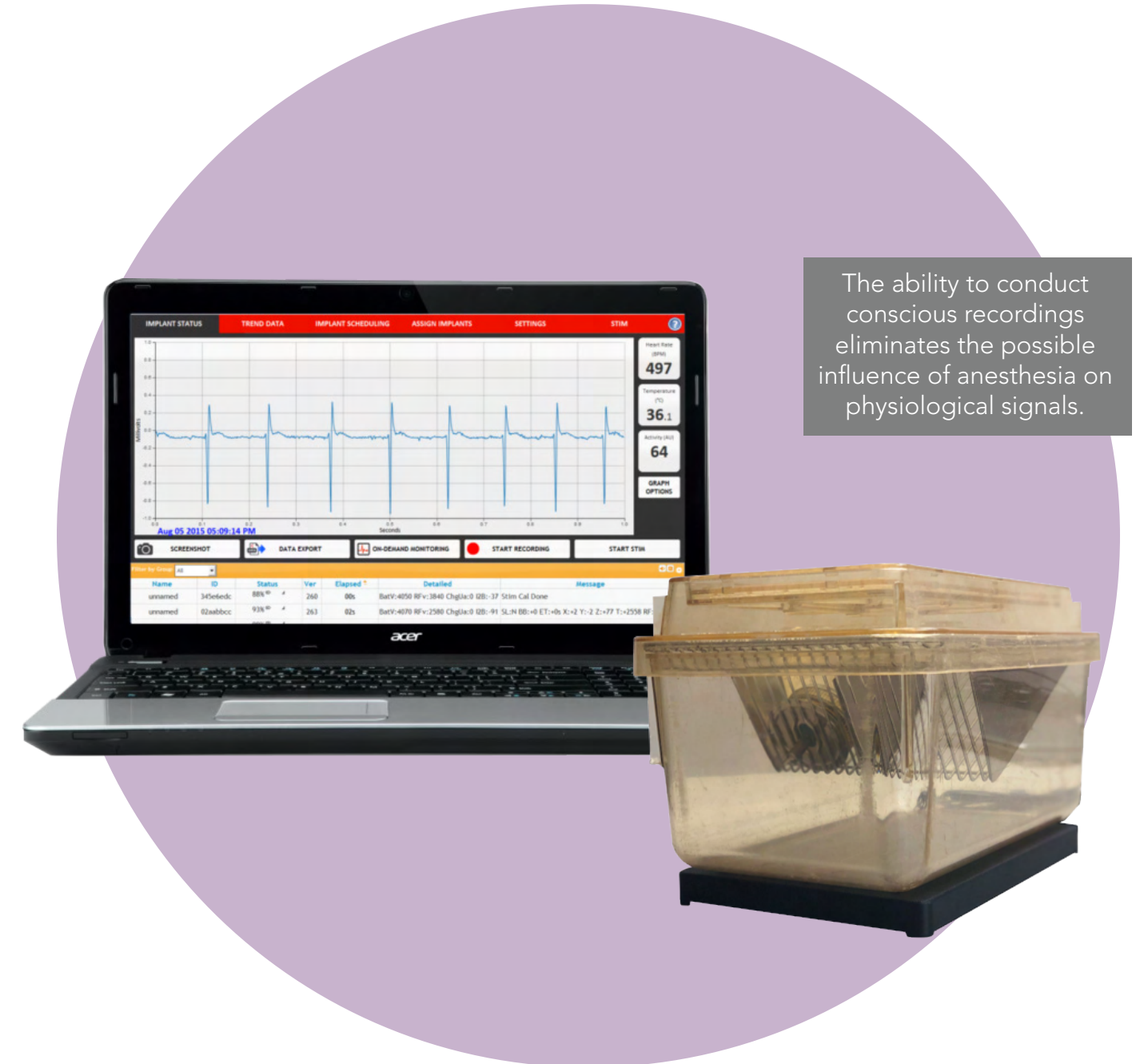


Telemetry with wireless technology for in vivo physiologic monitoring

The Indus Instruments Small Animal Telemetry System and associated wireless implants offer a simplified and cost-effective approach to studying physiology in conscious, unrestrained small animals. Scientists are able to monitor ECG, Heart Rate, Core Body Temperature and Activity in multiple, socially housed animals simultaneously.

Key Features

- Rechargeable batteries, no refurbishment needed, simply clean, sterilize and reuse
- Pads sit underneath animal cage and act as both the receiver and charger for the telemeters
- One mouse receiver pad can support up to 4 mice and up to 2 rats
- Analog output directly to any compatible data acquisition system (DAQ)



ECG



Subcutaneously-sutured leads allow researchers to record high-resolution heart rhythm free of anesthesia.

TEMPERATURE



Core Temperature can identify changes in circadian rhythm, inflammatory response environment, and more.

ACTIVITY



Accelerometers provide data useful for identifying circadian rhythm and general subject movement.

HEART RATE



High frequency measurements allow researchers to track long-term and short-term automatic responses.

Anesthesia Products

Anesthesia Solutions

For small animal research

There is growing demand for anesthesia equipment designed for small laboratory animals. RWD designs and manufactures complete anesthesia systems and accessories for the smallest preclinical research subjects. These systems are designed to deliver highly effective anesthesia with depth modulation. The systems are also designed with user safety as a priority. It includes excellent waste gas scavenging to protect users from the negative effects of short-term exposure to anesthetic gases.



Small Animal Anesthesia Machine



These systems can offer improved level of control over depth and duration of anesthesia, especially for prolonged procedures

Vaporizers



Vaporizers are available for isoflurane or sevoflurane; both easy and key fill options are available

Multi-Function Anesthesia Solution



These are perfect for new labs or if you are in the process of upgrading your current system

Face Masks



For inhaled anesthesia, with gas recovery, without respiration support

Induction Box



For rapid induction (only 2-5 minutes) of anesthesia before animal surgery

Oxygen Concentrator



The high purity oxygen is separated from the air by molecular sieve pressure swing adsorption (PSA) technology.

Heating Pads



Small animal homeothermic support and monitoring system

Active Gas Evacuating Unit



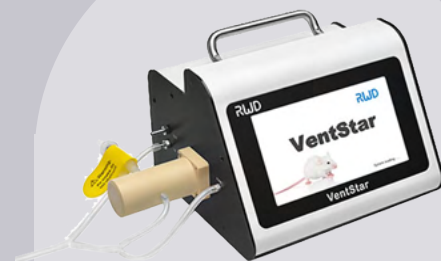
This unit was designed to safely and actively remove waste gas associated with inhalation anesthesia

Gas Filter Canisters



Disposable canisters used to absorb isoflurane, sevoflurane, enflurane, and other gases; large and small sizes available

Ventilators



Designed for scientific research, such as rat/mouse cardiopulmonary or respiratory experiments, to maintain or improve pulmonary ventilation experiments

Flowmeters



RWD anesthesia is equipped with an extended flow meter mounting position, which expands a variety of gas flowmeters to meet the need of a variety of gas supplies

Large Animal Anesthesia System



Large animal veterinary anesthesia machines provide clinical anesthesia for dogs, cats, pigs, monkeys, and rodents.

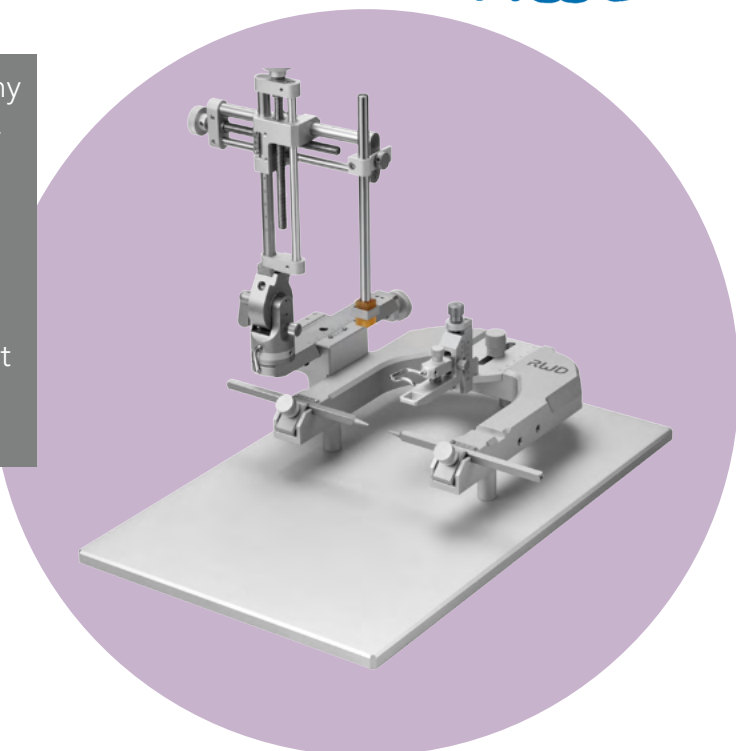
Stereotaxic & Other Research Products

RWD

Stereotaxic Equipment

Stereotaxic instruments are widely used in many fields such as neuroanatomy, neurophysiology, neuropharmacology, and neurosurgery.

RWD offers a series of stereotaxic instruments to meet the experimental needs of rat, mouse, guinea pig, rabbit, monkey, and other animal models. Moreover, RWD stereotaxic instrument is fully equipped, which greatly improves the applicability of each stereotaxic instrument.



Microcentrifuge and Refrigerated Microcentrifuge

RWD offers a modernized centrifuge featuring a state-of-the-art refrigeration system (if needed) to keep samples safe, a touch screen operating system for ease of use, and very low noise levels for a quiet work environment. It is a powerful and versatile universal centrifuge for virtually every lab application.

- Processes samples at speeds up to 15,000 rpm (21,130 x g), reducing run times
- Fast acceleration and deceleration built in
- Adaptable to any industrial or laboratory setting, non-refrigerated or refrigerated models come with multiple mode options for high-speed and powerful rotors.
- The 24-place 1.5/2.0 mL tube rotor should be able to match most labs capacity needs
- The system offers an industry standard maintenance-free motor and safety auto-lock closure system.



Intelligent Optogenetic Systems

Optogenetics is an emerging technology that uses optical principles and genetic engineering to make specific cell groups express or lack a certain function.

It has two unique characteristics: high spatial and temporal resolution and cell-type specificity.

Using genetic methods to express light-sensitive channel proteins in specific cell populations. These light-sensitive channel proteins will open under specific wavelengths of light to pump protons out of the cell, or anions (such as Cl⁻), cations (such as Na⁺ and K⁺) Pumped into the cell to hyperpolarize or depolarize the cell, so that the cell can be inhibited or excited instantly.

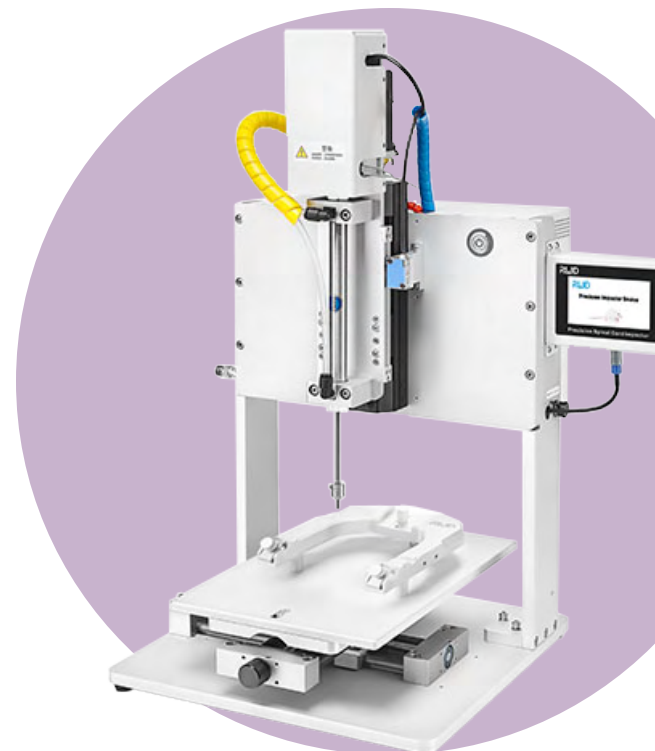


Precise Impactor

The Precise Impactor is used for traumatic brain injury and spinal cord injury models.

- The system adopts pneumatic-electric control, which can precisely adjust the speed, depth, and dwell time to achieve precise impact.
- The zero method uses a sensor contact mechanism to automatically detect the zero interface, which is sensitive and efficient.
- Standard cylindrical head hammers with different sizes are available.

It is an accurate tool with high efficiency, repeatability, and stability, ensuring reproducibility of the damage model.



Stereotaxic & Other Research Products

RWD

Automated Cell Counter



Cell counters are tools for counting live and/or dead cells in a culture. The C100 is a perfect cell counting option for any lab and is appropriate for a variety of samples, including mammalian cells, stem cells, blood cells, epithelial cells, endothelial cells, and more.

The automated cell counter uses microscopy with auto-focus technology that analyzes and counts cells in less than 20 seconds, with no user input. The sophisticated cell counting algorithm uses the image acquired to detect cells and omit debris, for an accurate total cell count.

The auto-focusing feature enables reproducible cell counts with reduced variability compared to manual hemocytometer counts and cell counters with manual focus.

Minux Rotary Microtome

The microtomes feature superior usability with excellent safety standards for all types of sectioning applications.

When working with delicate specimens the system will provide reproducible, thin, serial sections of best quality everytime.



Minux Cryostats

The cryostat features superior usability with excellent safety standards for all types of cryo-sectioning applications.

- This Cryostat is able to cut tissues at temperatures as low as -35 °C
- When working with delicate specimens the system will provide reproducible, thin, serial sections of best quality
- The tissue can be flattened, and the freezing expedited with a steel weight/heat extractor to provide a smooth flat cutting surface

Fully automated and semi-automated versions are available.

Fiber Photometry System

Fiber photometry has become the technique of choice for many researchers in the field of systems neuroscience because of its:

- Relative simplicity compared to other *in vivo* recording techniques
- High signal-to-noise ratio
- Ability to record in a variety of behavioral paradigms.

It most commonly used in conjunction with genetically-encoded calcium indicators (GECIs, the GCaMP series) .



Anatomical Pathology

EC 500 & EC 350

Modular paraffin embedding centers

The EC 500 and EC 530 are both modular paraffin embedding centers. The EC 500 is a modular tissue embedding center for paraffin blocks. It consists of three separate modules: 1) a dispensing console with a 5L paraffin reservoir, 2) a cryo console with space to cool up to 60 cassettes/molds at a time, and 3) a thermal console with high capacity cassette storage. This customizable system was designed with flexibility in mind and to achieve maximum efficiency and operator comfort. Compared to the EC 350, the EC 500 consists of three separate modules with increased storage and working room. The EC 350 is a modular tissue embedding center for paraffin blocks. It consists of two separate modules: 1) a dispensing console with a 5L paraffin reservoir and 2) a cryo console with space to cool up to 60 cassettes/molds at a time.

EC 500



EC 350



Myr

M-240

A semi-automated rotary microtome

The M-240 microtome from Myr uses state-of-the-art technology and embodies the company's commitment to quality and excellence in microtomy. It provides the operational convenience and stability required for routine sectioning in research and industrial applications. The M-240 is a semi-automated microtome and has been designed with ease of use, safety, and efficiency in mind.

The MEM (memory) key retrieves previous cut settings when working with uniform paraffin blocks leads to increased productivity. By simply pressing a key, the specimen moves into the stored MEM position. Additional safety feature available to change the specimen safely by adding an extra "safety distance" to the position stored in memory.



Myr

Anatomical Pathology

SS-30

A automatic slider stainer

The SS-30 automatic slider stainer from Myr has been designed for continuous loading to maximize efficiency and productivity in the lab. The system has a mutli-staining capability that allows simultaneous and automatic staining of various 30-slide racks with identical or different staining protocols. Created to occupy less space without compromising slide training productivity and ideal for labs with shallow benches, no space is wasted.

Myr

The automated slide stainer SS-30 is versatile in its design having the ability to store 20 programs with up to 50 user defined steps. Up to 5 slide racks can be run simultaneously depending on protocols, load frequency, and instrument configuration, enabling up to 150 slides to be stained at once.



STP-120

Spin Tissue Processor for Tissue Infiltration

The Myr Spin Tissue Processor has been designed to meet the requirements of every laboratory. The state-of-the-art technology and the unsurpassed processing technique makes it one of the best Spin Tissue Processors available on the market, with more than 3000 units installed worldwide.

Myr



Tissue processing is a technique that uses alcohols to remove water from the sample and replace it with a medium that allows for sectioning of tissue. The Myr Spin Tissue Processor employs a patented and unique technique that combines several movements for the tissue to achieve perfect infiltration results.

Vascular Research

Pressure Arteriograph Systems

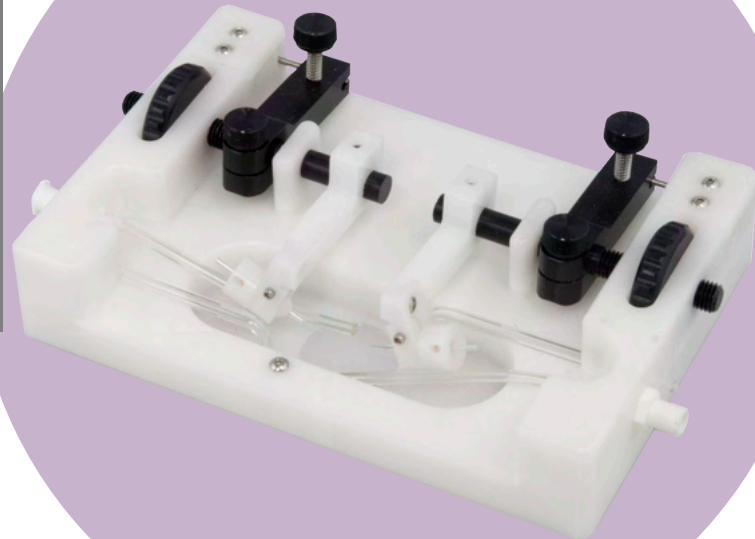


Apply and maintain physiological pressures in cannulated blood vessels

Pressure Arteriography is the gold-standard for quantifying function, reactivity and mechanics in isolated perfused blood vessels. When embarking on pressure arteriography, many factors warrant consideration. In addition to the requisite surgical skills for isolating and cannulating small arteries, proper instrumentation is also paramount. Pressure arteriography, while a powerful tool, comprises a number of different hardware and software components that must integrate and operate properly.

Living Systems Instrumentation is the only provider for complete pressure arteriography systems that not only allow the researcher to quickly get their experiments up and running, but ensures the quality and reproducibility of the data collected. Not only is LSI the pioneer in pressure arteriography, they also have a long and comprehensive publication history that speaks to their established and state-of-the-art arteriography systems.

Applying and maintaining physiological pressures in cannulated blood vessels is a key factor in vascular research. Precise control of pressure, with or without intraluminal flow, is a paramount necessity. Our pressure instrumentation is designed to establish, control, and measure the intraluminal pressure during an experiment.

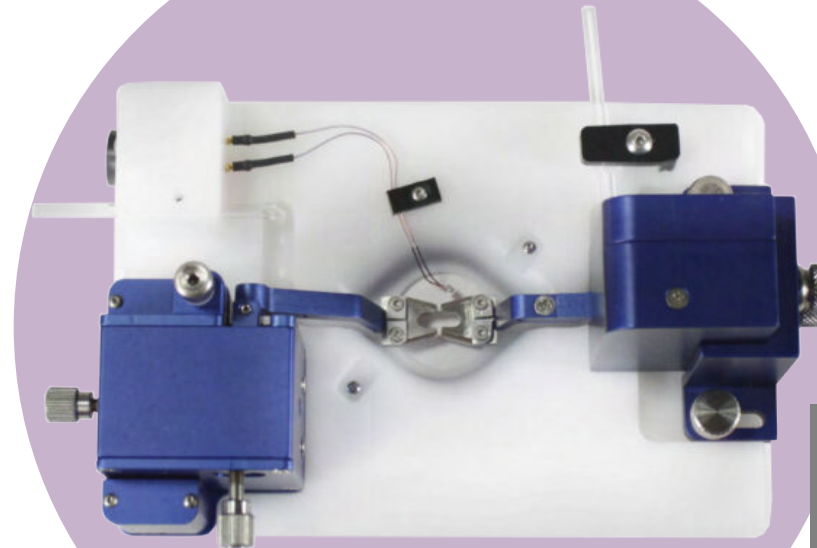


Wire Myograph Systems



Classic Halpern/Mulvany style wire myograph

Wire Myography is an *in vitro* technique that allows us to examine functional responses and vascular reactivity of isolated small resistance arteries. Vessels from various species, including transgenic models, and vascular beds can be examined in a variety of pathological disease states. Vessels are dissected, cleaned, and then mounted onto a channel myograph under isometric techniques. Each vessel is then normalized to determine maximum active tension development. This allows the standardization of initial experimental conditions, an important consideration when examining pharmacological differences between vessels.



Living System's myograph is suitable for a range of applications including force measurements in microvessel rings, large vessels such as carotid artery and aorta, airway, intestine, bladder, and many more.

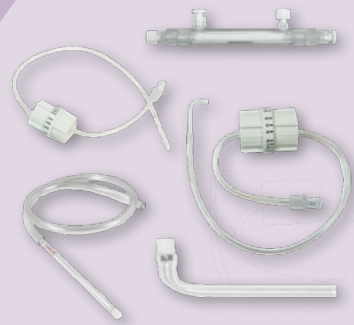
In Vitro & Ex Vivo Research

Laboratory Consumables

Laboratory equipment essential to any successful research project



Aeration & Oxygenation



Our gas dispersion products provide ultra-fine bubble generation for optimal and minimally-disruptive aeration. Our oxygenators offer non-foaming and efficient gas exchange performance.

Dissection Dishes



Use our high quality, tack and bubble-free silicone coated dissection dishes.

pH Meters & Electrodes



We offer specialized accessories for making pH measurements while using our vessel chambers.

Cannulae



Our glass cannula packs contain one dozen high quality hand-made pipettes. Tips are ground and polished to have a distinct beveled edge, which facilitates vessel cannulation.

Tools



The importance of quality dissection instruments cannot be overstated. Dissection platforms, forceps, scissors, and dissections kits are available here.

Dissection Pins



These stainless steel dissection pins are well-suited for a variety of applications

Flow



Our flow instruments are designed to aid the researcher performing experiments under various flow and pressure conditions.

Electric Field Simulation



Our STIM-150I stimulator packages are useful for applications requiring electric field stimulation. Each package includes a constant current stimulator(s), power supply cabinet, computer interface card, CATSTIM software, and interface cables. The output of each stimulator is accessible via a BNC connector.

Temperature



We offer equipment that will enable an investigator to control temperature via an external superfusion setup, or by directly heating the chamber bath. Most chambers can be heated by either method, with the addition of some equipment components.

Video



Capture your data on video with our video equipment. Use our high-quality video cameras measure blood vessel diameter with our Video Dimension Analyzer to track blood vessel diameter and left and right wall thicknesses by using an analog video signal.

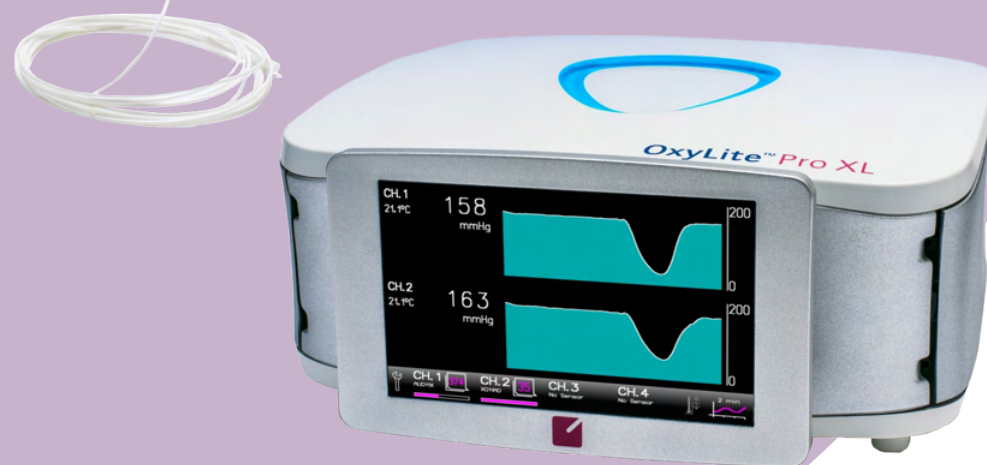
Tissue Oxygenation

OxyLite

Dissolved oxygen (pO₂) and temperature monitor



Oxford Optronix oxygen sensors leverage state-of-the-art optical fluorescence technology intended for the quantitative measurement of oxygen partial pressure (pO₂) and temperature in tissues, physiological fluids, cell cultures and other *in vitro* applications.



OxyLite

- Oxygen (pO₂) & temperature monitor
- *In vivo* & *in vitro*
- Fully 'plug and play'; no calibration procedures
- Single-channel monitor

OxyLite Pro/Pro XL

- 2 or 4-channel monitors
- Enhanced productivity & features
- Touch-screen display

The survival of tissues and organs relies on an adequate supply of oxygen. The measurement of tissue oxygen tension provides a direct measurement of the balance between oxygen supply (by the blood) and metabolic oxygen consumption (by the tissue), i.e. a readout of oxygen availability at the cellular level. This is in contrast to spectroscopy (NIRS) techniques, which merely describe haemoglobin oxygenation status.

The OxyLite oxygen monitors allow life scientists to directly and continuously measure dissolved oxygen in the normal physiological as well as hypoxic ranges, both in experimental *in vivo* models, or in any number of *in vitro* applications.

The OxyLite and OxyLite Pro/ProXL systems can be combined and sold with the OxyFlo and OxyFlo Pro/Pro XL systems as a combined unit.

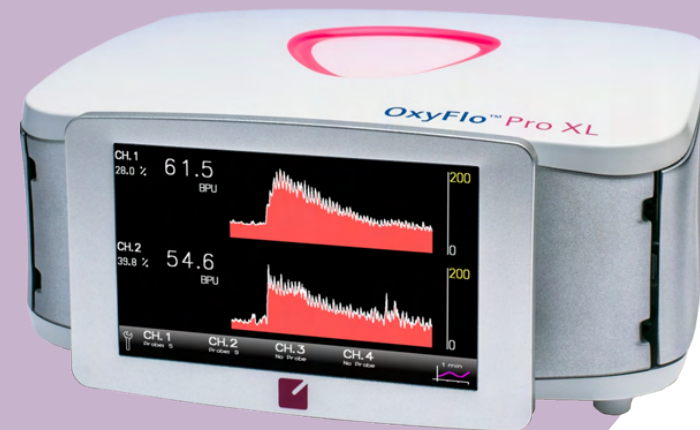
Applications

- Cancer
- Biology
- Angiogenesis
- Stroke and brain injury
- Vital organ and muscle tissue monitoring
- Flap monitoring
- Ophthalmology
- Wound healing
- Dissolved oxygen monitoring in cell culture
- Bioreactors

Tissue Perfusion

OxyFlo

Laser-Doppler tissue blood flow monitor



OxyFlo devices are laser Doppler flowmetry (LDF) monitors intended for monitoring of relative microvascular blood flow in living tissues.

OxyFlo

- Laser-Doppler tissue blood flow monitor
- *In vivo* & *in vitro*
- Fully 'plug and play'; no calibration procedures
- Single-channel monitor

OxyFlo Pro/Pro XL

- 2 or 4-channel monitors
- Enhanced productivity & features
- Touch-screen display

Perfusion by blood provides tissues with vital oxygen and nutrients, while removing waste products and distributing signaling molecules around the organism. The measurement of microvascular blood perfusion provides researchers with critical information in a number of research applications where blood supply has been disrupted.

Oxford Optronix blood flow monitors help life scientists to directly and continuously measure local microvascular blood perfusion in *in vivo* models of ischemia-related disorders.

The OxyFlo and OxyFlo Pro/Pro XL systems can be combined and sold with the OxyLite and OxyLite Pro/ProXL systems as a combined unit.

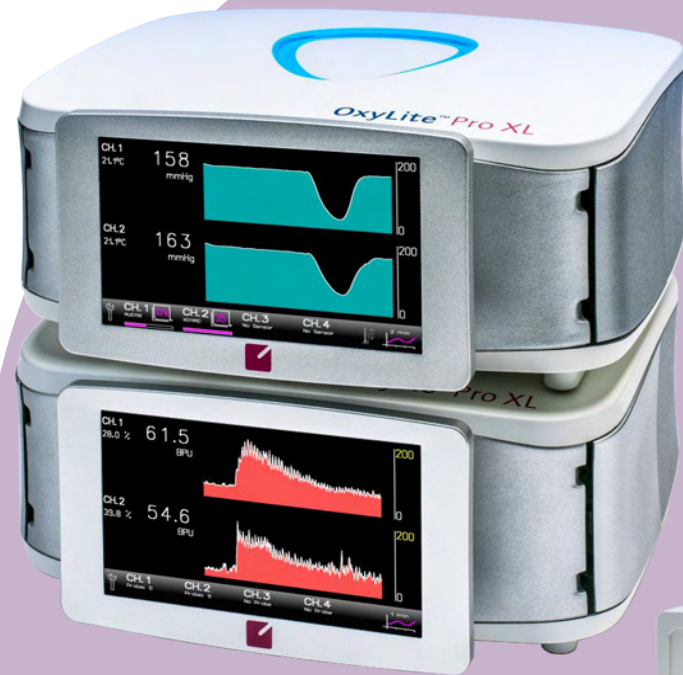
Applications

- Peripheral vascular disorders
- Cerebral perfusion monitoring in models of stroke and brain injury
- Tumour perfusion monitoring/angiogenesis
- Blood flow in free flaps and pedicle flaps
- Wound healing
- Surgery
- Transplantation

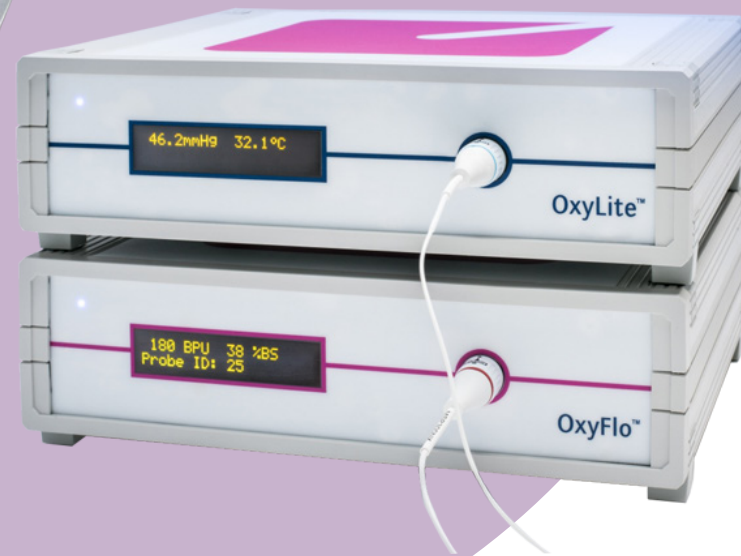
Tissue Perfusion & Oxygenation

OxyLite and OxyFlo Combined

Tissue oxygen, blood perfusion, and temperature monitor



Oxford Optronix OxyLite and OxyFlo monitors have been employed together for the simultaneous, single-sensor monitoring of tissue oxygen, blood perfusion and temperature.



OxyLite and OxyFlo

- ➔ Single-channel combined oxygen, temperature and laser-Doppler tissue blood perfusion monitoring

OxyLite Pro and OxyFlo Pro

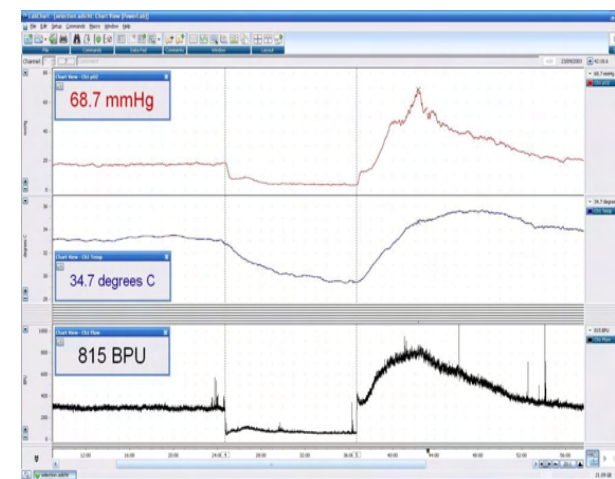
- ➔ Combined TWO or FOUR channel oxygen, temperature and laser-Doppler tissue blood flow monitoring
- ➔ Integrated touch-screen

One of the most powerful and unique features offered by Oxford Optronix tissue vitality monitors is the ability to measure tissue oxygen, laser-Doppler blood flow and temperature simultaneously from the same tissue micro-region. This is achieved by combining counterpart monitors into a 'stack' arrangement and the use of the unique, combined, multi-parameter sensors.

The use in this way of a 4-channel OxyLite Pro XL and a 4-channel OxyFlo Pro XL device enables the collection of multi-parameter physiological data from up to four independent tissue sites at one time, providing unsurpassed data collection and productivity potential.

Applications

- ➔ Tumour angiogenesis
- ➔ Vital organ vitality during transplantation and shock monitoring
- ➔ Cerebral vitality monitoring during stroke
- ➔ Brain and spinal cord injury models
- ➔ Tissue flap surgery and wound healing



A single, combined oxygen/blood flow/temperature sensor was used to measure the effect of transient global cerebral ischaemia induced by common carotid artery occlusion.

Dissolved Oxygen Monitor

Resipher

Measure extra-cellular oxygen flux in standard multi-well plates



The Resipher turns a multi-well plate into a dynamic oxygen consumption reader. Based on a unique, patented technology, Resipher multi well plate analyzers offer unmatched performance in a compact package with low-power, plug-and-play USB connectivity. Resipher's web-based, real-time logging and analysis software provides fast and easy data visualization and is extendable for customized real-time analysis.

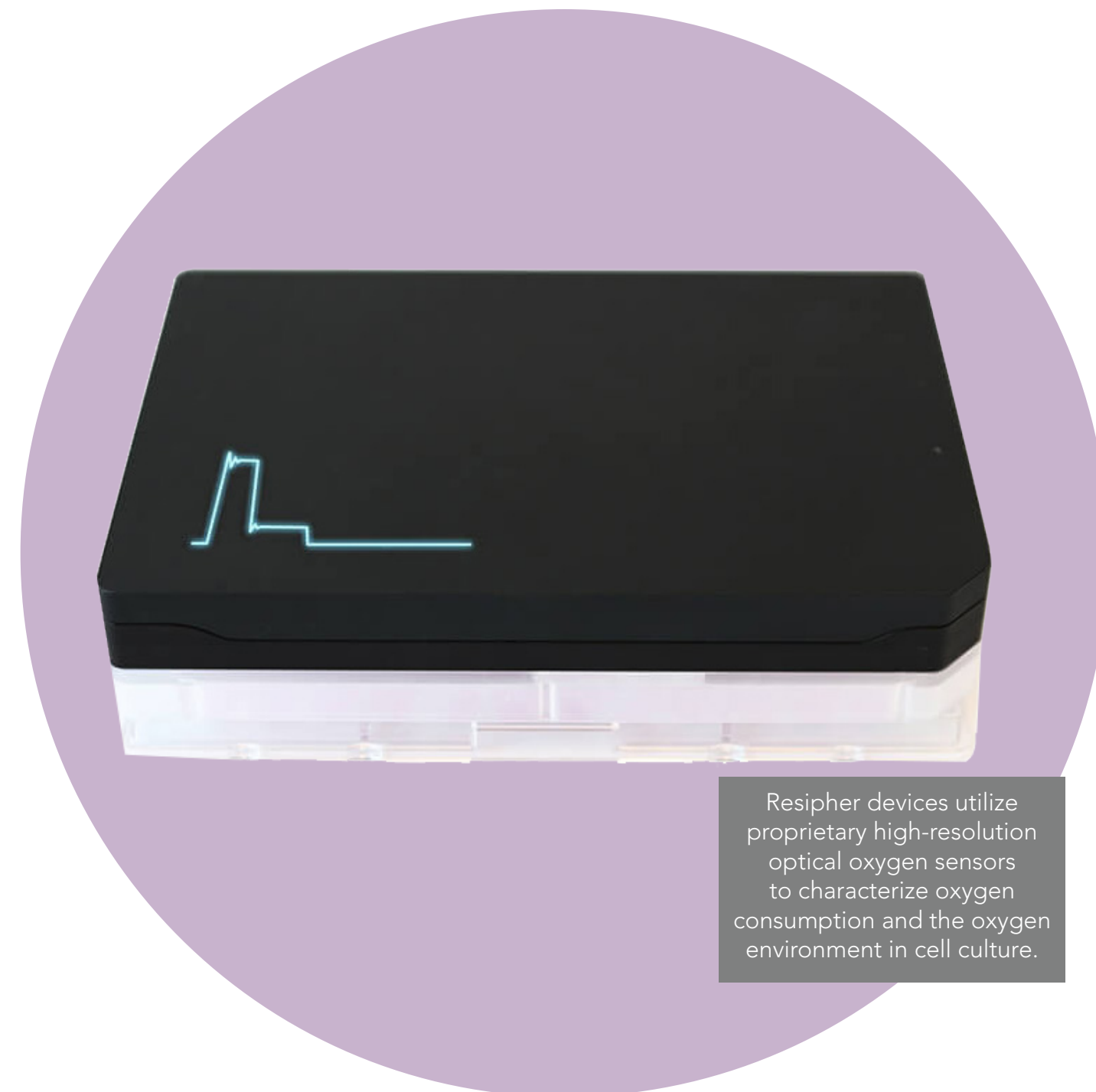
The Resipher series of cell culture monitors are the world's first hand-held devices to measure extra-cellular oxygen flux in standard multi-well plates. They provide continuous, non-invasive oxygen consumption rate (OCR) measurements for days to weeks from inside any incubator/workstation that fits your cell culture plates. Data is streamed from the Resipher over a USB cable to a storage and control hub outside the incubator/workstation where it can be accessed via the web allowing users to monitor and analyze their data from anywhere.

Key Features

- Users can monitor oxygen concentration from as few as 625 cells
- The disposable lids are compatible with most standard 96-well plates including Nunc, Greiner, Falcon, and Costar.
- Plug and play USB connection
- Minimally invasive
- Remote analysis with the web-based streaming platform
- Multi-parameter monitoring

Applications

- Cancer biology
- Angiogenesis
- Stroke
- Brain injury
- Vital organ
- Muscle tissue monitoring
- Ophthalmology
- Wound healing
- Dissolved oxygen monitoring in cell culture, bioreactors etc.



Resipher devices utilize proprietary high-resolution optical oxygen sensors to characterize oxygen consumption and the oxygen environment in cell culture.

Automated Colony Counter

GelCount

Colony and spheroid counter

The GelCount is known as the “gold standard” for cancer biologists performing colony counts and is backed up by over 200 scientifically peer reviewed scientific articles.

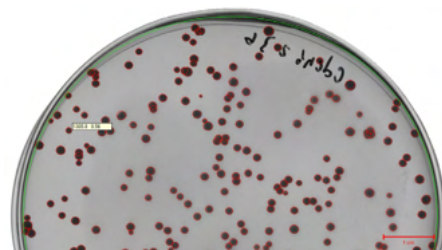
The Colony Formation Assay is universally recognized as an accepted method for measuring cell viability when exposed to chemotherapy drugs, radiation or other agents. However, manual counting the subsequent cell colonies is a difficult and painstaking task in which objectivity is often tough to achieve.

The GelCount is a simple-to-use, software-operated colony counter that automates the whole process of counting and analyzing mammalian cell colonies in petri dishes, multi-well plates, and some T25 flasks. These colonies may be adherent (2D; usually stained), or non-adherent and unstained (freely floating in a semi-solid 3D matrix like methylcellulose or soft agar).

The GelCount therefore provides an effective and economical alternative to the highly subjective and labor-intensive task of manually counting colonies in colony forming cell assays; which can likewise be described as a cell survival assay, a clonogenic assay, or a tumor cloning assay.

Applications

- All-in-one colony counter for spheroid and colony cell forming assays
- The singular solution for quickly and accurately imaging, counting and characterizing colonies
- High-throughput advantages
- Fully unbiased and impartial 'machine' counting
- Easily export colony counts and various size parameters



Multi-well plates are assessed one well at a time with an uncomplicated zoom and pan control providing easy image navigation



Colonies are fully imaged and are saved to a computer where they can be processed and characterized. The data generated can easily be exported from this single, integrated platform. As a result, the GelCount has removed the unsatisfactory alternative of imaging colonies on one device, relocating these images and then processing them.

Cell Culture Monitoring

Lux2

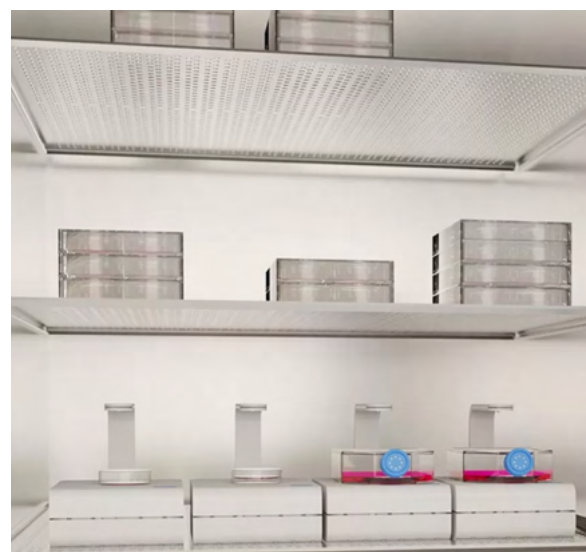
Real-time cell culture monitoring and analysis

Both CO₂ and tri-gas (hypoxia) incubators are designed to generate and maintain a defined environment. They do a great job of imitating physiological conditions so that cells can grow in their ideal environment. The problem lies in the frequency the door of these chambers are opened and cells are removed from this ideal environment every time a measurement is to be made or an image is to be taken (usually under an external microscope). What this means is most scientists never actually measure cells under physiological conditions and the cells they are looking at are generally in some state of shock. To fix this problem the **CytoSMART Lux2** has been developed and is able to fit in nearly every incubator.

Live-cell imaging itself has become a necessary analytical tool in many cell biology laboratories that operate in the field of neurobiology, developmental biology, pharmacology. Currently live-cell imaging is difficult because it requires large costly high-end devices that are difficult to operate. The **CytoSMART Lux2** is a highly compact, easy to use, and affordable inverted microscope for bright-field live cell imaging so it can be used in every biological laboratory. While it has functionality for basic imaging, it also has the capability to be used in routine cell culture processes like tracking confluency over time.

Key Features

- Compact and efficient
- Fits within any regular or hypoxia incubator
- Save and analyze images in the cloud
- Easy to use



Multiple systems can fit comfortably in any standard incubator making it ideal for comparison studies



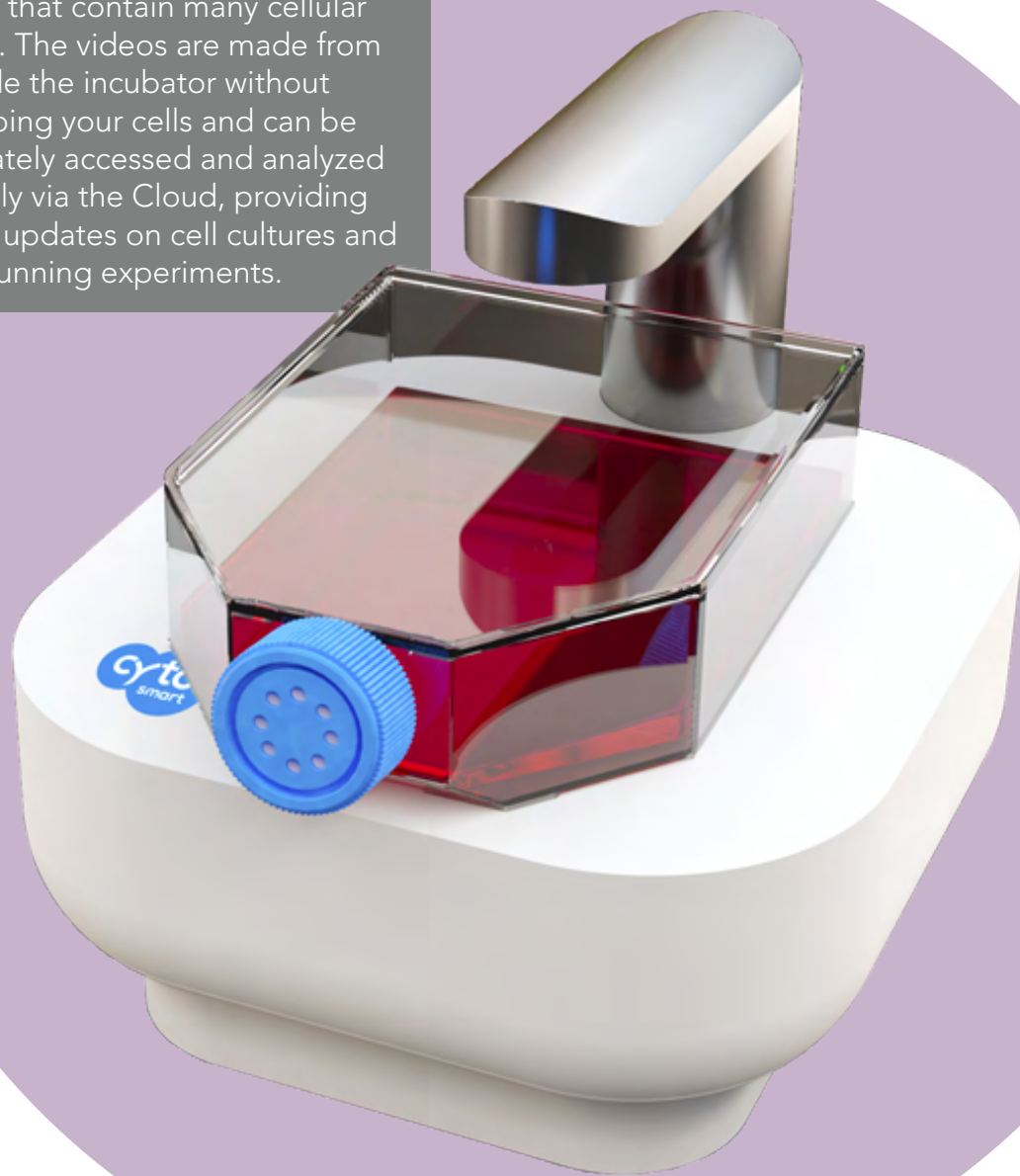
The Lux2 has been specifically designed to be used within anaerobic/microaerophilic workstations. This means controlling environmental factors and imaging do not need to be done separately which removes all environmental variability out of your study.

Fluorescence

Cell Culture Monitoring



The Lux3 FL fluorescence microscope automatically creates time-lapse movies that contain many cellular features. The videos are made from inside the incubator without disturbing your cells and can be immediately accessed and analyzed remotely via the Cloud, providing real-time updates on cell cultures and running experiments.



Lux3 FL

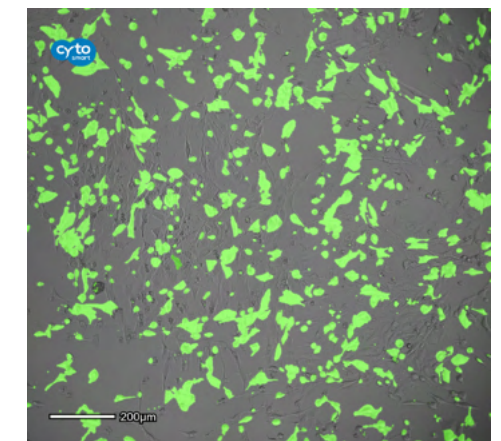
Real-time fluorescence cell culture monitoring and analysis

Having the ability to monitor cell culture over an extended period of time, offers insight into cell dynamics and function. Live cell imaging microscopes open up exciting and unique avenues, to analyze cell viability, health, migration, and even responses to external factors.

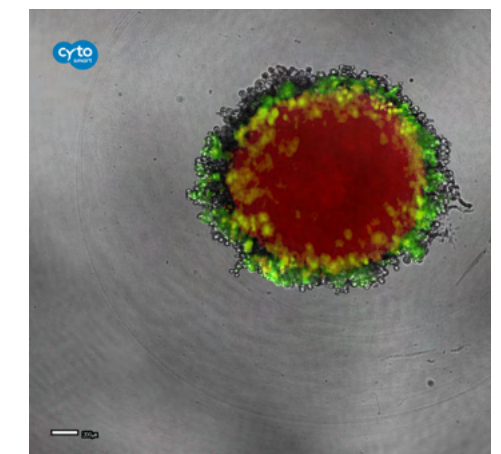
To support investigators in the life sciences to continue developing the understanding of cellular processes, **The CytoSMART Lux3 FL** allows researchers to track dynamic cellular processes by taking high-quality images to create real-time time-lapse movies. Simultaneously, the cells can be kept in a controlled environment inside a standard cell culture incubator.

Applications

- Monitoring cell viability
- Determining transfection efficiency
- Investigation of co-cultures
- Analyzing cellular processes
- Drug discovery
- Tissue engineering
- Immunology
- Cancer research and immunotherapy

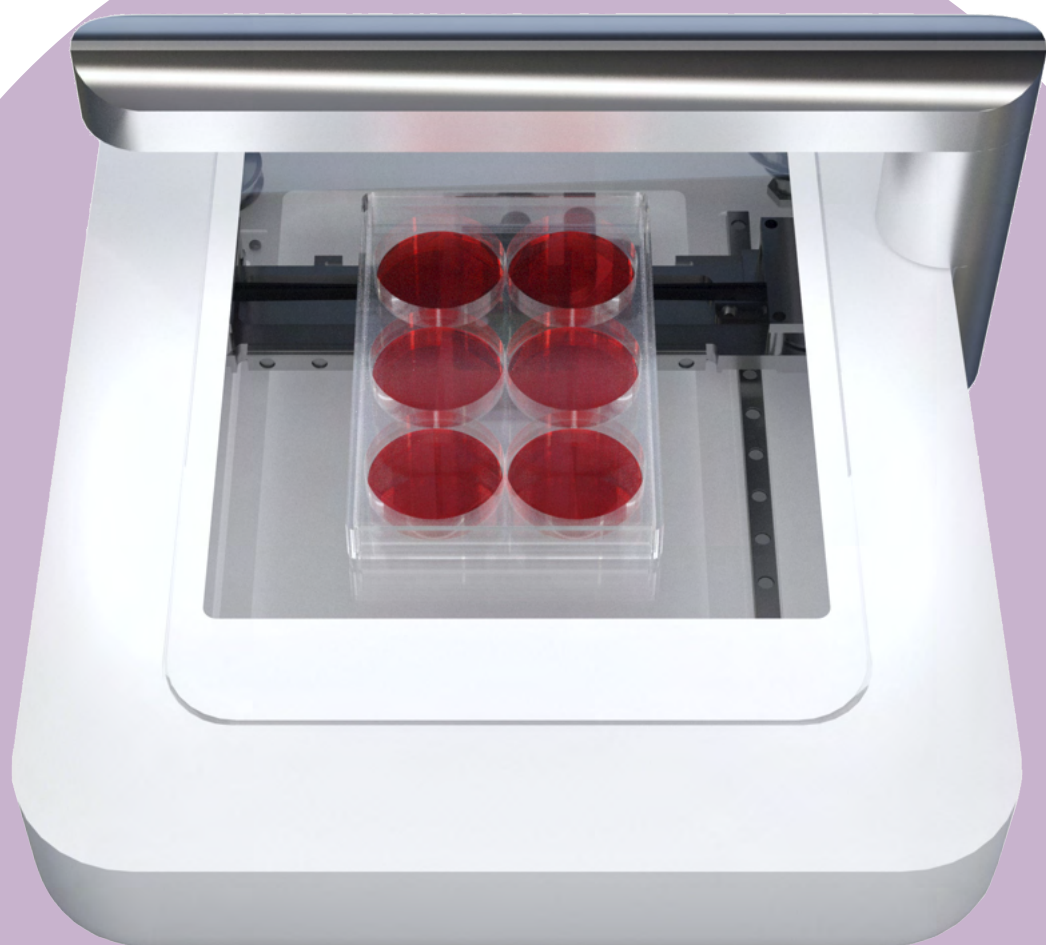


Proliferating cells



Drug uptake

Cell Culture Monitoring



Obtaining images is often highly disturbing to living cells. The Omni rapidly captures bright field images in cell-level detail without disturbing the cells.

Omni

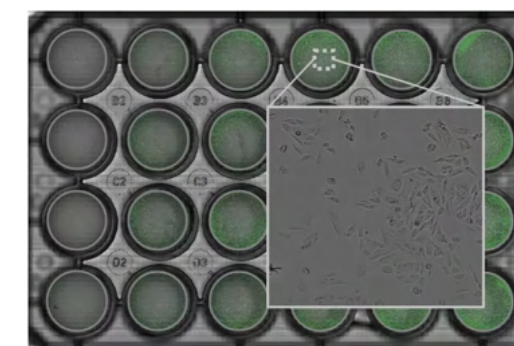
Real-time whole plate cell culture monitoring and analysis

Having the ability to monitor cell culture over an extended period of time, offers insight into cell dynamics and function. Live cell imaging microscopes open up exciting and unique avenues, to analyze cell viability, health, migration, and even responses to external factors.

To support investigators in the life sciences to continue developing the understanding of cellular processes **The CytoSMART Omni** has been developed as an automated bright-field lab microscope that visualizes whole culture vessels and can even be used within standard CO₂-incubator. With the **Omni** researchers can perform kinetic assays by creating time-lapse videos that depict cellular behavior for days or weeks at a time.

Applications

- Cell Proliferation
- Migration
- Colony Formation
- Image Analysis from time-lapse videos
- Examine and compare parameters like cell confluence, area infiltration (wound healing assays) and growth rate across wells on a single plate
- Drug Discovery
- Tissue Engineering
- Immunology
- Immunotherapy
- Cancer Research



The OMNI provides whole well analysis

Oxygen Control Workstation

VelO₂x

Rapid oxygen control chambers for mice, rats and small animal models

The VelO₂x system has been engineered to provide an isolated and highly controlled oxygen environment to small animal models (ie mouse and/or rat). By directly mimicking the oxygen conditions experienced across a wide variety of disease or treatment models, the VelO₂x grants researchers a better understanding of how O₂ levels affect various conditions such as sleep apnea, systemic hypertension, pulmonary dysfunction, and ischemia to name a few.

The VelO₂x system itself has two components – a gas mixer and animal chamber. The ICONIC Gas Mixer, which offers pinpoint control of O₂, is connected to the isolated chamber where animals are held. The isolated chamber comes in 2 sizes: a 31L and 66L size which hold 1 and 2 cages respectively.

Key Features

- Compact and efficient
- Closed system allows for more accurate measurements rapidly equilibrates to set point changes
- Quick ramping of O₂ levels both up and down
- Ergonomically engineered with built-in touch screen controls
- Minimal footprint
- Cost effective

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Ideal for fast O₂ transition studies, such as chronic Intermittent Hypoxia in Animals.



Hypoxia Chamber

CondoCell

Isolation box for cell culture

CondoCell is a robust isolation box for any sensitive cell culture in T-flasks, petri dishes or multi-well plates. It fully captures the environment of any incubator or hypoxia workstation making non-stop, uninterrupted culture possible. CondoCell, when used in conjunction with a workstation, helps to avoid any disruption in the delivery of temperature, humidity, and gas (CO₂ and/or O₂) to the culture micro-environment. The CondoCell also has the added benefit of preventing cross contamination with other cultures in the chamber.

For researchers, continuous control over the micro-environment in both culturing and observation means that cells are never subjected to fluctuations in gas, temperature, and humidity. The CondoCell provides true physiological cell growth conditions and has been described as luxury accommodation for cells.

Key Features

- Accurate gas delivery and control
- Environmentally controlled portable boxes
- Fits in any Hypoxia or CO₂ incubator, minimal footprint and stackable
- Glasstop and bottom allowing for up to 20X Microscopy
- Reduced cross contamination
- Ideal for short-term hypoxia or long-term physoxia studies

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Hypoxia Chamber

PhO₂x Box

Cell culture chamber

Baker Ruskin's PhO₂x Box is a new, easy to use and economical Physoxia/Hypoxia system designed for *in vitro* cell culture experiments. PhO₂x Box comprises a Gas Controller (with both O₂ and CO₂ control) and a Cell Culture Chamber.

The Cell Culture chamber can be placed on a lab bench, or be placed inside an Incubator or a Workstation, while the Gas Controller remains outside. The Cell Culture Chamber has removable shelving and can accommodate microtiter well plates, small flasks and petri dishes.

Key Features

- 2-year warranty for peace of mind and lower running costs
- Offers 4 types of Chamber for user convenience, each is gas tight, has removable shelving and is easy to clean
- Controls and Monitors O₂ and CO₂ levels with a single touchscreen
- Intuitive touchscreen with large font number display
- Small footprint (325mm wide x 298mm deep)
- Easy user set up,takes around 10 minutes
- Only needs N₂ and CO₂ cylinders for operation for lower running costs

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PhO₂x Box provides the ability to install a second, or even third, independently controlled atmosphere in parallel with the main chamber.



Hypoxia Chamber

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OxyGenie provides for a continuous, physoxic/hypoxic environment for your cells. It is a unique, miniaturized incubation platform designed to deliver the physiological O₂ and CO₂ conditions your cells require to thrive.

OxyGenie

Continuous physoxic/hypoxic environment for cells

OxyGenie is a low-oxygen culture system for animal, plant, and bacterial studies. A miniaturized incubation platform, OxyGenie brings researchers a small, portable, and continuous physoxic (hypoxic) environment for short-term physiological oxygen and temperature-based studies.

OxyGenie is ideal for conducting high-resolution microscopy or irradiation under physiologically relevant oxygen conditions, further extending the time in which your cells can be exposed to physiological cell growth conditions. OxyGenie is a notable tool with minimal risk for start-up validation or use in proof of concept for physiological cell culture within your lab. Six culture wells facilitate completely enclosed physiological growth conditions, seated on microscope glass, allowing for adaptation to any experimental procedure.

All life science researchers can now utilize technology delivering controlled, physiologically relevant conditions. Get results equivalent to research carried out within a hypoxic incubator or workstation with the OxyGenie.



Key Features

- Full physiological control
- Fully portable
- Irradiate and microscope functionality under physoxia

Hypoxia Chamber

InvivO₂

Physiological cell culture workstation

Baker Ruskinn's Hypoxia incubated workstation chambers are designed to mimic the physiology of your subject matter, giving you precise results under controlled conditions. They allow you to study the most complex cell interactions while regulating O₂, CO₂, temperature and humidity.

The InvivO₂ workstation is packed with new, innovative features that allow you to study even the most complex cell interactions under perfect physiological O₂ conditions. Whether you're hoping to replicate the environment of blood vessels or lung tissue, the InvivO₂ is the best tool for the job.

Applications

- Apnea/Apnoea
- Ocular Angiogenesis
- IDS (Sudden Infant Death Syndrome)
- Atherosclerosis
- Ischemia (Cardiac Infarction, Stroke, etc.)
- COPD (Chronic Obstructive Pulmonary Disease)
- Pulmonary Fibrosis
- Developmental Disabilities
- ADHD (Attention Deficit Hyperactivity Disorder)
- Recreational Hyperoxia

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For cell culture applications that require carefully controlled oxygen regulation, InvivO₂ offers accurate and stable user-defined environmental controls, direct access to the inner chamber.



Anaerobic & Microaerophilic Workstation



BugBox anaerobic workstations are designed to help microbiologists cope with rising workloads and provide the best primary isolation rates. Plates can be examined easily without exposing them to oxygen. The interlock system allows simple and fast transfer of 90mm plates into the anaerobic chamber.



BugBox

Compact anaerobic & microaerophilic workstation

Baker Ruskinn BugBox anaerobic & microaerophilic workstations are designed specifically to help microbiologists cope with rising workloads and provide the best primary isolation rates. Read plates easily without exposing them to oxygen.

With quick and easy access via the Ezee Sleeve gloveless port system and energy-saving lighting that provides perfect illumination, BugBox is easy to use. Its compact size meets the needs of even the smallest laboratory spaces. Adjustable temperature and humidity provides a precisely controlled environment that is optimal for cell growth, with no dry spots.

Compared with anaerobic jars, BugBox is economical with a lower cost per plate, and more reliable, providing a stable atmosphere. All life science researchers can now utilize technology delivering controlled, physiologically relevant conditions at an economical price. Get results equivalent to research carried out within a hypoxic incubator or workstation with the BugBox.

BugBox Plus

- ➔ Up to 234 90mm plate capacity
- ➔ Optional Single Plate Entry System (SPES)



BugBox M

- ➔ User defined control of O₂
- ➔ Up to 270 90mm plate capacity



Anaerobic & Microaerophilic Workstation

Concept

Systemized anaerobic or microaerophilic incubation

The **Concept** range has been rigorously tested to maximize productivity of systemized anaerobic or microaerophilic incubation; bringing together a host of features that you can trust, bringing immediate benefits to your busy laboratory.

Access your workstation quickly & easily with the **Ezee Sleeve** direct-hand access port system. The optional removable pop-off front cover (**Pop-off**) makes set-up and cleaning so easy; the modular-design provides users with true flexibility to expand and upgrade work spaces. It is by getting the small things right that sets this range apart. We know just how crucial it is for your equipment to support your teams to deliver effectively and efficiently every day.

Key Features

- Fast interlock purge cycle times and Single Plate Entry System (SPES™)
- Optional remote monitoring and control system, allows complete control wherever you are
- Access your workstation quickly & easily with our Ezee Sleeve direct-hand access port system
- Optical sensor & HEPA filtration as standard
- Process more plates in one controlled environment with our high capacity workstations (up to 500 plates)



BAKER RUSKINN



Save time in getting patient samples efficiently into correct anaerobic conditions, with our fast interlock purge cycle times and Single Plate Entry System (SPES). Go further with our remote monitoring and control system, allows complete control wherever you are.

CO₂ Incubator

ReCO₂ver

Rapid recovery incubator

In all scientific research applications, each cell type will benefit from keeping proper physiological cell growth conditions. Cell culture incubators attempt to mimic optimal physiological conditions for your research, but the atmospheric conditions within the laboratory and the environmental parameters incubators attempt to control are lost with each door opening with taking a long time to get back to the proper growth conditions your work is dependent on. There are several factors an incubator should control in order to help you achieve optimal cell growth conditions.

Precision in temperature, gas and humidity as well as the rapid recovery of those conditions after door openings are crucial for ensuring cells are exposed to a constant environment required for their well-being. The ReCO₂ver incubator can maintain *in vivo*-like conditions to protect the integrity of your work.

Key Features

- Large usable workspace, combined with proprietary technology
- Accurate, precise, and stable environmental conditions
- Determine what level of protection or control your work requires
- Provide unparalleled protection of your work
- The vertical, uni-directional downward airflow with full-face HEPA filter delivers clean air to the chamber
- InteliCELL P.I.D. control algorithm offers active humidity control
- Ultrasonic humidity delivery system eliminates the use of a water pan

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Cell Culture Workstation

BAKER RUSKINN



SCI-tive's closed cell culture environment mimics *in vivo* conditions with precise, user-defined controls, allowing you study even the most complex cell interactions.

SCI-tive

Cell culture workstation

Baker Ruskinn's **SCI-tive** range of advanced hypoxia workstations is perfectly suited for cell culture under physiological oxygen, helping to yield better stem cell lines by eliminating cellular stress linked to variations in temperature, pH and oxidation. **SCI-tive's** closed cell culture environment mimics *in vivo* conditions with precise, user-defined controls, allowing you study even the most complex cell interactions. Its spacious interior provides a continuous, controlled-oxygen environment, from seeding through expansion, assay and harvest, and easily accommodates a variety of analytical equipment – no more working on an open bench.

SCI-tive's optional HEPA filtration system provides clean air within the work area to protect cultures from contaminants, and an upgraded enhanced containment package provides user protection.

Key Features

- ➔ Internal HEPA filtration to Class 4 (ISO 14644-1)
- ➔ Removable from 420L usable chamber volume
- ➔ Interlock has O₂ control and heating
- ➔ Large detox sachet
- ➔ Vacuum port connector
- ➔ Gas sample port
- ➔ Multi-cable gland (up to 6 individual cables)
- ➔ O₂ control (from 0.1% to 23.0% in 0.1% increments)
- ➔ CO₂ control (from 0.1% to 30.0% in 0.1% increments)
- ➔ Ultrasonic Humidity control (from ambient to 85% RH)
- ➔ Temperature control (5 °C above ambient to 45.0° C in 0.1° C increments)



NOTES

NOTES

Scintica:

Linking scientists with the right precision tools

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