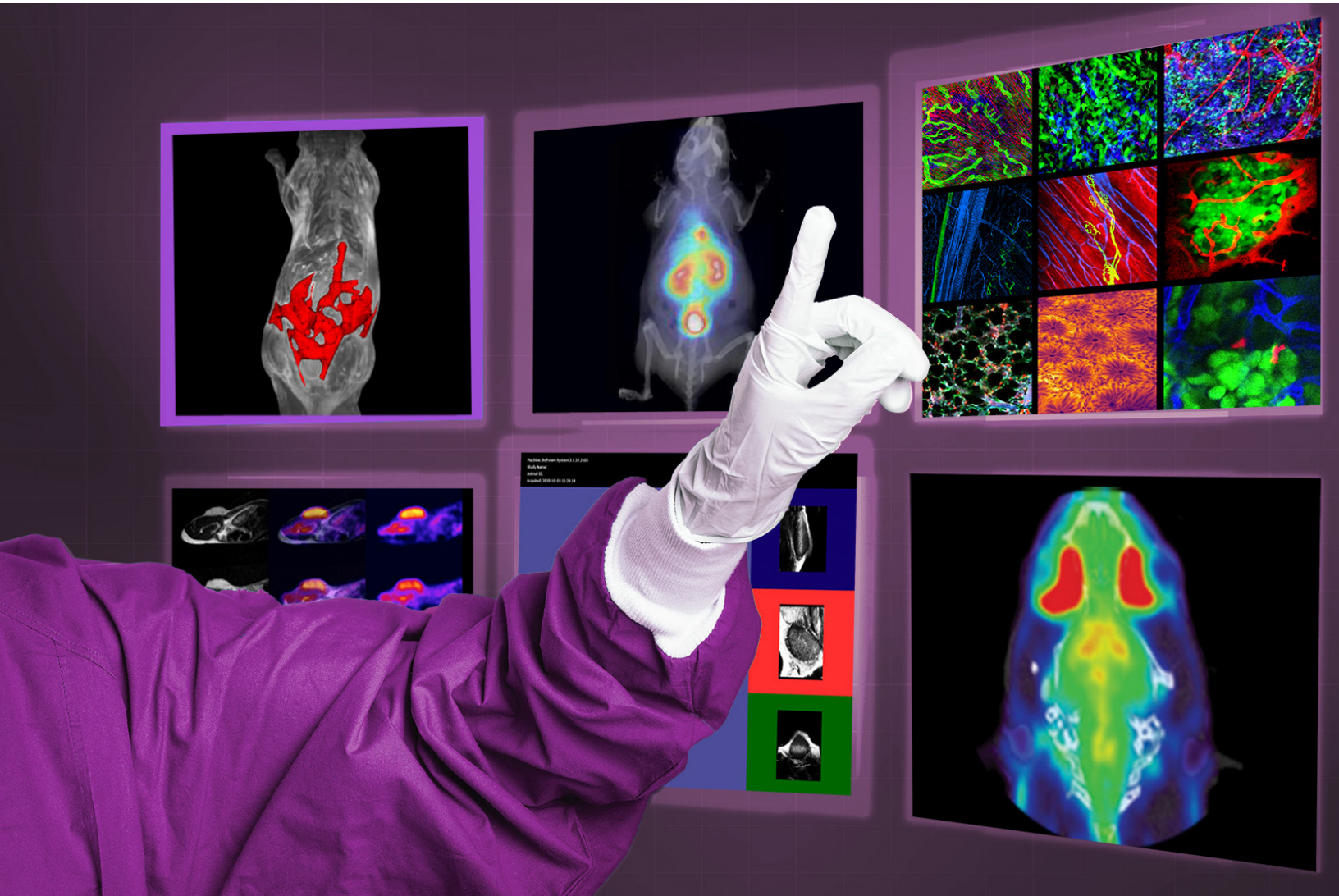


# Scintica:



## PRODUCT BROCHURE

Preclinical Research Technologies & Solutions

[WWW.SCINTICA.COM](http://WWW.SCINTICA.COM)



# ABOUT US

## Making your research simpler and more productive

At Scintica, we are dedicated to advancing science and medicine by supplying top-notch instrumentation to scientists and the preclinical research community. With our carefully selected portfolio of preclinical imaging and other products, we strive to connect researchers with the high value research tools necessary for the complicated process of scientific research.

### Our Mission

We are dedicated to advancing science and medicine by supplying top-notch instrumentation to scientists and the preclinical research community. We strive to connect researchers with the most suitable research solutions and tools, empowering them to make meaningful contributions to their field and drive progress.

### We are Scientists

Our team of scientific experts is here to help you find the right solution to advance your research.

### Our Goals



We are committed to delivering cutting-edge instrumentation, tools, and research solutions to the preclinical research and translational medicine communities.



Building connections within the research community is a top priority for us. As such, one of our core values is keeping scientists informed about the latest ground breaking technologies in their field.



Providing exceptional support to our customers and assisting them in finding the best research solutions is one of our primary goals. We strive to consistently deliver outstanding customer service.

# OUR PARTNERS



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# HIGH-FREQUENCY ULTRASOUND

## PROSPECT T1



The **Prospect T1** is an innovative high-frequency ultrasound system designed for *in vivo* preclinical imaging in small animals such as mice and rats. This compact and cost-effective tablet-based system provides high-resolution images (up to 30  $\mu$ m) and advanced capabilities to monitor changes in hemodynamics and observe anatomical structures in real-time.

There are three available probes with frequencies ranging from 10-60MHz. The system comes with all standard imaging modes including B-mode, M-Mode, Power/Color/PW/Tissue Doppler, and Contrast (linear and non-linear/harmonic) imaging mode.

### Probes

**20 MHz**  
10-30 MHz

**40 MHz**  
20-50 MHz

**50 MHz**  
30-60 MHz



### Applications

#### Cardiovascular Research

The system offers real-time cardiac and vascular imaging, enabling heart function and blood flow assessment from *in utero* to adulthood.

#### Cancer Research

The system is used in various oncology models, enables non-invasive detection and tracking of tumor growth, assessment of blood flow and molecular changes, and facilitates image-guided procedures.

#### Abdominal & Anatomical Imaging

The Prospect T1 offers non-invasive 2D and 3D imaging of abdominal organs, urogenital, musculoskeletal areas, and blood vessels, as well as perfusion assessments.

#### Developmental Biology

The Prospect T1, non-invasively enables pregnancy confirmation, embryonic development monitoring, cardiac assessment, and image-guided interventions.

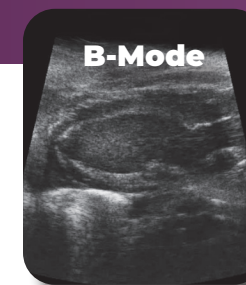
#### Ophthalmology

The Prospect T1 is versatile for visualizing eye structures in various species, supporting 3D imaging, Doppler assessment of blood flow, microbubble perfusion evaluation, and image-guided injections.

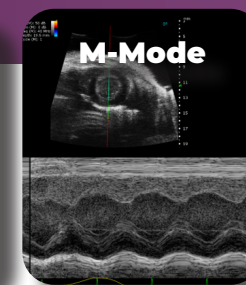
#### Other Species

The Prospect T1 is versatile, and can also be used with other species such as zebra fish, chick embryos, amphibians, bats, hamsters, and more.

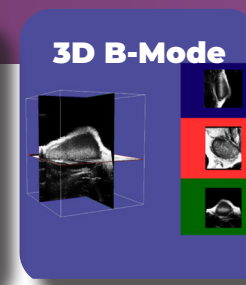
### Imaging Modes



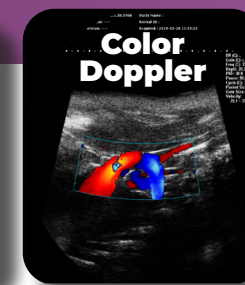
Mouse Left Ventricle in Long Axis



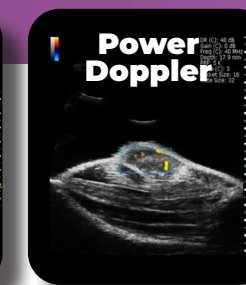
Mouse Left Ventricle in Short Axis



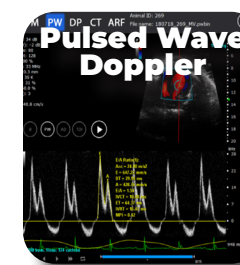
Mouse Mammary Fat Pad Tumor 3D



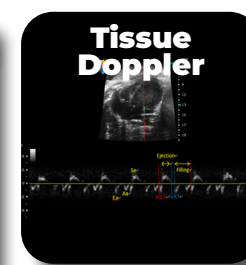
Mouse Aortic Arch



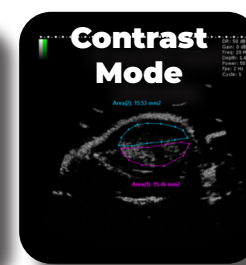
Mouse Subcutaneous Tumor



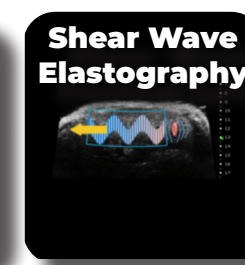
Mouse Mitral Valve Inflow



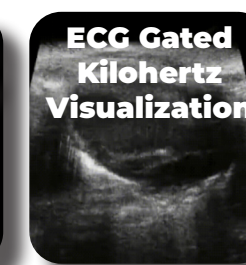
Mouse Mitral Valve Annulus



Mouse Subcutaneous Tumor



Shear Wave Through Mouse Liver



ECG Gated Kilohertz Visualization

### Features & Specifications

<b>Hardware Add-ons:</b>	<ul style="list-style-type: none"> <li>3D Motor</li> <li>Image Guided Injection</li> <li>Acoustic Radiation Force Push Probe</li> </ul>
<b>Animal Handling Platform:</b>	<ul style="list-style-type: none"> <li>Mouse Platform: 17.2 x 14.2 cm (L x W)</li> <li>Rat Platform: 28.3 x 18.2 cm (L x W)</li> <li>Heated</li> <li>Integration for Anaesthesia nose cone</li> <li>Temperature Monitoring</li> <li>Respiratory Rate, ECG, and Heart Rate</li> </ul>
<b>Resolution:</b>	<ul style="list-style-type: none"> <li>Up to 30 <math>\mu</math>m</li> </ul>
<b>Field-of-View: (FOV)</b>	<ul style="list-style-type: none"> <li>Depth up to 39 mm x Width 23 mm</li> </ul>
<b>Frame Rate:</b>	<ul style="list-style-type: none"> <li>Up to 400 fps (EKV Mode)</li> </ul>
<b>System Dimensions:</b>	<ul style="list-style-type: none"> <li>360 x 280 x 65 mm</li> </ul>
<b>Data Format:</b>	<ul style="list-style-type: none"> <li>Still and movie export: jpg, bmp, tif, DICOM, avi</li> <li>RAW RF data, with MatLab import scripts</li> <li>Proprietary format for saved CineLoop data</li> </ul>

- Compact with Small Footprint
- Tablet Design
- Touch Screen
- Intuitive Workflow



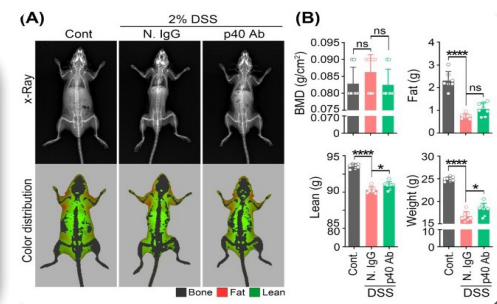
# DEXA (DXA) iNSiGHT



The **iNSiGHT DEXA** system is a state-of-the-art *in vivo* Dual Energy X-Ray Absorptiometry (DXA/DEXA) system designed for preclinical research. The system offers a wide range of measurements, which include bone mineral density, bone mineral content, bone area, tissue area, percentage of fat tissue, weight, percentage of lean tissue, and total weight in grams.

This system is equipped with a fully shielded X-ray cabinet and is optimized for studying small animals such as mice, rats and other small animals up to 5kg. It provides fast and efficient body composition measurements with a scan time of 25 seconds. Combined with its low-dose radiation, makes this ideal for longitudinal studies.

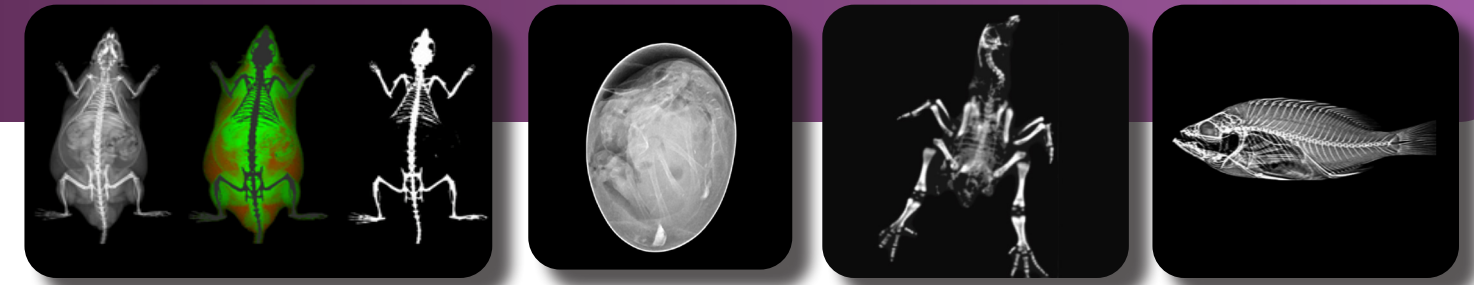
- Scan time of 20 sec
- Low Radiation
- User Friendly
- Large Scan Area (16.5 X 25.5 cm)



\* Representative DEXA images captured on the iNSiGHT system in a mouse model of colitis

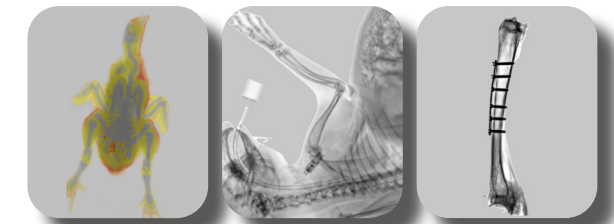
## Applications

<b>Metabolic Disorders</b>	The iNSiGHT system can be used to track and assess disease progression and changes in body composition measurements over time, in response to treatment by measuring changes in fat and lean mass.
<b>Drug Safety &amp; Toxicology</b>	The system can track and assess changes in body composition in response to the administration of a target compound at an effective dose. This can be done by looking for changes in bone mineral density and content, and/or by measuring changes in fat and lean mass over time.
<b>Musculoskeletal Diseases</b>	The system can assess the progression or regression of disease in response to a therapeutic regimen by measuring changes in bone mineral density and content and/or by measuring changes in fat and lean mass over time.
<b>Metabolic Bone Disease &amp; Arthritis</b>	DXA imaging can help understand Arthritis & Metabolic bone diseases better by assessing the various conditions that lead to bone abnormalities, the progression and response to treatment and monitor the progression.
<b>Hypoxia</b>	The iNSiGHT system can assess the changes in body composition measurements in response to hypoxic exposure. The colorimetric image allows for the differentiation of visceral and subcutaneous fat.

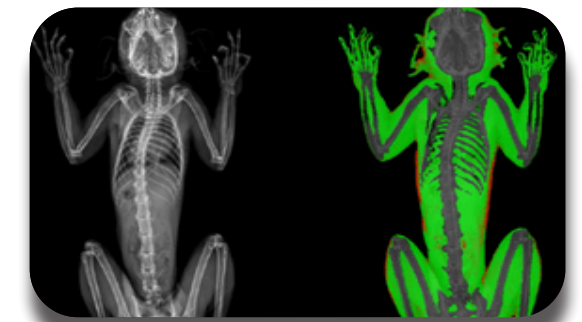


## Features & Specifications

<b>Scan Time:</b>	• 25 Seconds = High-throughput
<b>Easy Data Acquisition:</b>	• No preparation steps other anaesthesia needed
<b>Low Dose Radiation:</b>	• Minimal ionizing radiation (0.66 mGy) = Longitudinal studies
<b>Scan Area:</b>	• 16.5 x 25.5 cm • Samples to be imaged from ~0.1 g to ~5 kg
<b>Scan Method:</b>	• Cone beam
<b>Pixel Size:</b>	• 100 µm at 1.2X, 31 µm at 4X with DR mode
<b>Adjustable field-of-view and resolution:</b>	• Multiple levels of magnification • 100 µm – up to 31 µm in Digital Radiography Mode
<b>Images:</b>	• X-Ray attenuated image • Bone mineral density map • Color map
<b>Calculation Parameters:</b>	From whole animal or sample or by user defined regions of interest (ROI). • Bone Mineral Content (BMC) • Bone Mineral Density (BMD) • Bone area • Tissue area • Fat tissue (mass and percentage) • Lean tissue (mass and percentage) • Total mass
<b>Dimensions:</b>	• 66 x 61 x 113 cm (W x D x H)
<b>Power:</b>	• 110/240 VAC, 50/60 Hz, 200 VA



- Small Footprint
- Low Dose Radiation
- Fast Scan Time



\* References: Jung, Y. K., Lee, S., Yoo, J. I., & Baek, K. W. (2023). The protective effect of IL-12/23 neutralizing antibody in sarcopenia associated with dextran sulfate sodium-induced experimental colitis. *Journal of Cachexia, Sarcopenia and Muscle*.

## ECHO-MRI

### Niumag QMR06



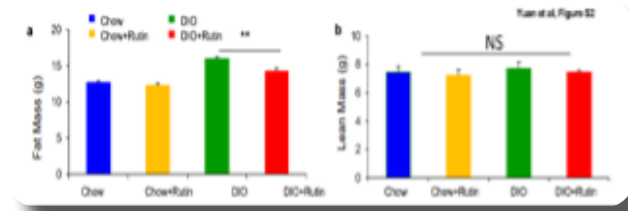
The **Niumag QMR06** is a quantitative echo-MRI system designed specifically for awake, small animal body composition measurements.

With no preparation or anesthetic needed, the QMR06 is effective for user friendly quantitative analysis of lean mass, fat mass, and water content.

Echo-MRI quantifies these parameters based on the differences in relaxation times between lean, fat, and water.

The QMR06 provides the following measurements:

- **Lean mass (g)**
- **Fat mass (g)**
- **Water content (g)**



### Features & Specifications

#### Zero Preparation Required

No-hassle method for quantifying body composition with no prior preparation needed, such as anesthesia.

#### Awake Animal Measurements

Without need for anesthetic, you can measure lean mass, fat mass, and water content in awake animals.

#### Permanent Magnet Technology

With permanent magnet technology operation and maintenance is simplified with the QMR06.

#### Non-invasive

With a non-invasive approach for body composition measurements, the QMR06 is ideal for longitudinal studies.

#### Optional Imaging Mode

The QMR06 has an optional mode to acquire 2D images of the spatial distribution of fat mass.

### Applications

- Metabolic Disorders
- Nutrition
- Drug/Therapeutic Development
- Oncology
- Aging

System Models & Specifications		
	QMR06-060H-PRO	QMR06-090H-PRO
<b>Magnet Type:</b>	Permanent magnet (0.15 ±0.015 T)	
<b>Animal Size:</b>	10 – 100 g Mouse 0.6 – 6 g Tissue	10 – 800 g Mouse / Rat 0.6 – 6 g Tissue
<b>Scan Time:</b>	> 3 minutes	
<b>Probe Diameter:</b>	Standard - 60 mm Optional - 15 mm	Standard - 60 mm Standard - 90 mm Optional - 15 mm
<b>Operating System:</b>	Windows 11	

## MICRO CT

### DELab $\mu$ CT-100x (Benchtop)



The DELab micro computed tomography-100X ( $\mu$ CT-100X) is designed specifically for in vivo imaging of small specimens and ex vivo isolated samples. The DELab  $\mu$ CT-100X is a benchtop design and fully self-shielded allowing the placement in small laboratory settings. The DELab  $\mu$ CT-100X has great versatility with adjustable field of views and the MCI-110 model accommodating 4 sample carriers for specimens or samples ranging from 1  $\mu$ m resolution at 11 mm diameter x 19 mm length to 7.5  $\mu$ m resolution at 39 mm diameter x 44 mm length.

While the MCI-100 model accommodates 3 sample carriers for specimens or samples ranging from 5  $\mu$ m resolution at 19 mm diameter x 35 mm length to 33  $\mu$ m resolution at 83 mm diameter x 146 mm length. The DELab  $\mu$ CT-100X has both 2D and 3D scan modes.

### Features & Specifications

#### CCD X-ray Detector

With a sealed transmission tube and CCD x-ray detector the DELab  $\mu$ CT-100X produces high resolution images.

#### Phase Contrast Enhancement

With in-line phase contrast imaging technology sharper images of low attenuation samples are achievable.

#### Adjustable High-resolution Image Acquisition

The system acquire images with a range of resolutions from 1  $\mu$ m – 7.5  $\mu$ m (MCI-110) or 5  $\mu$ m – 33  $\mu$ m (MCI-100).

#### Multiple Carriers for Different Applications

The system has a 4-carrier (MCI-110) or a 3-carrier (MCI-100) ideal for isolated samples or zebrafish and similar sized research models.

#### Stable Image Acquisition

Incorporates a patented carrier that ensures stable 360° rotation of the sample with anti-twist and anti-vibration technology.

#### Automatic Temperature Regulation

The DELab  $\mu$ CT-100X has automatic internal temperature regulation to maintain consistent conditions for optimal image quality.

#### Fully Self-shielded Design

A fully self-shielded design makes the DELab  $\mu$ CT-100X ideal for use in shared spaces and does not require additional safety precautions.

System Models & Specifications		
	MCI-110 (4 sample carriers)	MCI-100 (3 sample carriers)
<b>Scan Method:</b>	Dual energy cone beam	
<b>Sample Size:</b>	Minimum: 11 mm diameter, 19 mm height  Max: 39 mm diameter, 44 mm height	Minimum: 19 mm diameter, 35 mm height  Max: 83 mm diameter, 146 mm height
<b>Field-of-View: (Max W x L)</b>	30 mm x 18.5 mm	97 mm x 72.5 mm
<b>Image Resolution:</b>	1, 3, 5, 7.5 $\mu$ m	5, 15, 33 $\mu$ m
<b>Operating System:</b>	Windows 11	
<b>Dimensions: (W x D x H)</b>	96 x 95.5 x 67.5 mm (430 kg)	96 x 95.5 x 67.5 mm (433 kg)
<b>Power:</b>	110/220V ±10%, 50/60Hz, 15A	



# MICRO CT

## DELab $\mu$ CT-100



The **DELab  $\mu$ CT-100**, micro-computed tomography-100, is designed for *in vivo* imaging of small lab animals and *ex vivo* isolated samples. The system improves small animal imaging with a 2-second fast scan mode, ultra-high-resolution images, and 3D image reconstruction.

With 3 interchangeable beds suitable for varying animal models and automatic carrier recognition for field-of-view (FOV) adjustment the DELab  $\mu$ CT-100 is ideal for a wide range of applications with a maximum 80 mm FOV. Ultra-high-resolution mode can achieve 2  $\mu$ m image resolution.

The DELab  $\mu$ CT-100 supports both animal and user welfare. It is fully self-shielded and includes animal monitoring that incorporates an LED surveillance camera, physiological monitoring, airflow heating, and anesthesia gas system.

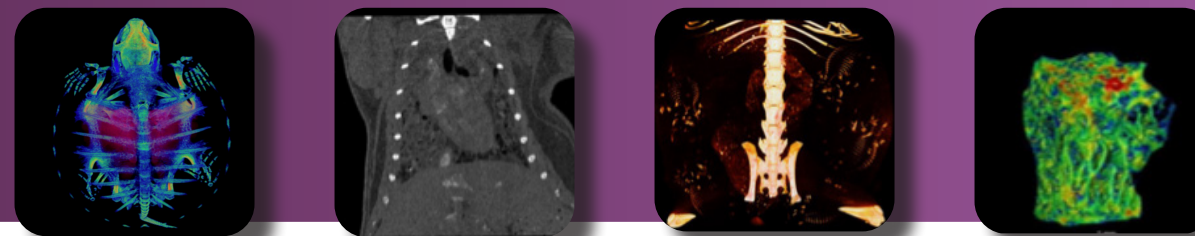
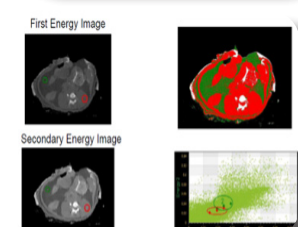
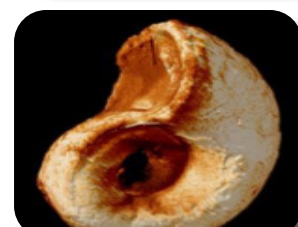
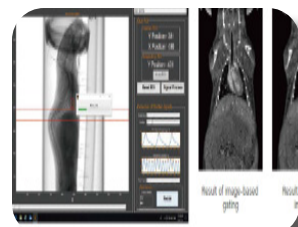
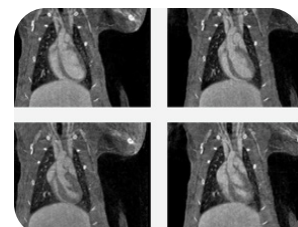
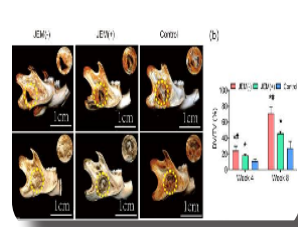
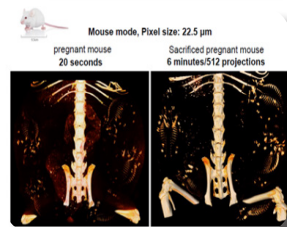
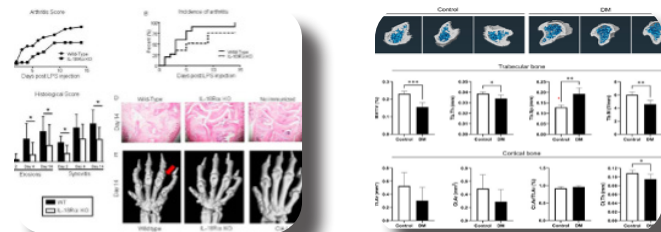
*In vivo* animal and *ex vivo* sample 3D micro-computed tomography ( $\mu$ CT)

### Measurements

- Total volume (TV) ( $\text{mm}^3$ )
- Bone volume (BV)
- Bone mineral density (BMD)
- Ratio of bone and tissue volume (BV/TV)
- Average cortical bone thickness ( $\mu\text{m}$ )
- Trabecular bone thickness ( $\mu\text{m}$ )
- Number of trabecular bones (Tb. N)
- Ventilation - Inspiration and Expiration - volume ( $\text{mm}^3$ )
- Ratio of body fat to body volume (BF/TV)

### Applications

- Musculoskeletal Disease
- Metabolic Disorders
- Embryonic Development
- Cardiology / Pulmonology
- Food Science
- Geology
- Oncology



### Features & Specifications

#### Fast Scan Mode

Fast scan mode allows a 2 second scan time.

#### High-resolution Image Acquisition

The DELab  $\mu$ CT-100 can acquire images within a range of resolutions from 2  $\mu\text{m}$  – 44.9  $\mu\text{m}$ .

#### Automatic Animal Bed and FOV Recognition

With One Touch auto-setting, the DELab  $\mu$ CT-100 software recognizes the animal bed size in use and automatically adjusts the field-of-view (FOV).

#### Multiple Animal Beds for Different Species

The system has rat (80 mm x 200 mm), mouse (40 mm x 200 mm), and *ex vivo* sample (10 mm x 200 mm) bed options for a range of study designs and applications.

#### Comprehensive Animal Welfare Features

The system has independent controllable heated airflow and anesthesia gas systems for maintaining a stable animal environment. It also has an embedded LED camera for real-time animal monitoring. ECG and respiratory gating are displayed on the interface.

#### Built-in Syringe Pump

The DELab  $\mu$ CT-100 can automatically inject contrast agents during scanning for enhanced soft tissue imaging.

#### Fully Self-shielded Design

A fully self-shielded design makes the DELab  $\mu$ CT-100 ideal for use in shared spaces and does not require additional safety precautions.

System Modes & Specifications				
	Rat (All beds)	Mouse (All beds)	Ex vivo/In Vivo	Ultra-high resolution
<b>Scan Method:</b>	Gantry dual-energy cone-beam CT			
<b>Animal Size:</b>	2-350 g	2-350 g	2-35 g	2-20 g
<b>Scan Time:</b>	2 s (fast-scan) 20 s	2 s (fast-scan) 36 s	111 s	272 s
<b>Field-of-View: (Max W x L)</b>	80 mm x 180 mm	40 mm x 135 mm	23 mm x 90 mm	10 mm x 54 mm
<b>Image Resolution (Reconstruction)</b>	44.9 $\mu\text{m}$ (22.45-180 $\mu\text{m}$ )	22.5 $\mu\text{m}$ (11.25-90 $\mu\text{m}$ )	15 $\mu\text{m}$ (7.5-60 $\mu\text{m}$ )	9 $\mu\text{m}$ (1.5-36 $\mu\text{m}$ )
<b>Dose Rate: (mGy/s in air)</b>	0.57~127 mGy/s	0.7~178 mGy/s	0.8~162 mGy/s	1.0~170 mGy/s
<b>Operating System:</b>	Windows 11			
<b>Dimensions: (W x D x H)</b>	880 x 1500 x 1500 mm (950 kg)			
<b>Power:</b>	100-240 V~/50-60 Hz/5.85 A			
<b>Operating Temp:</b>	10-30 °C			





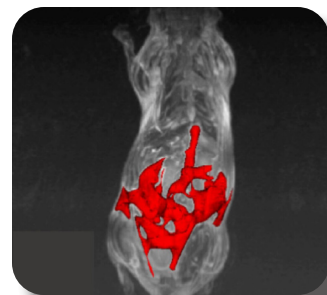
# MRI

## M-SERIES COMPACT MRI



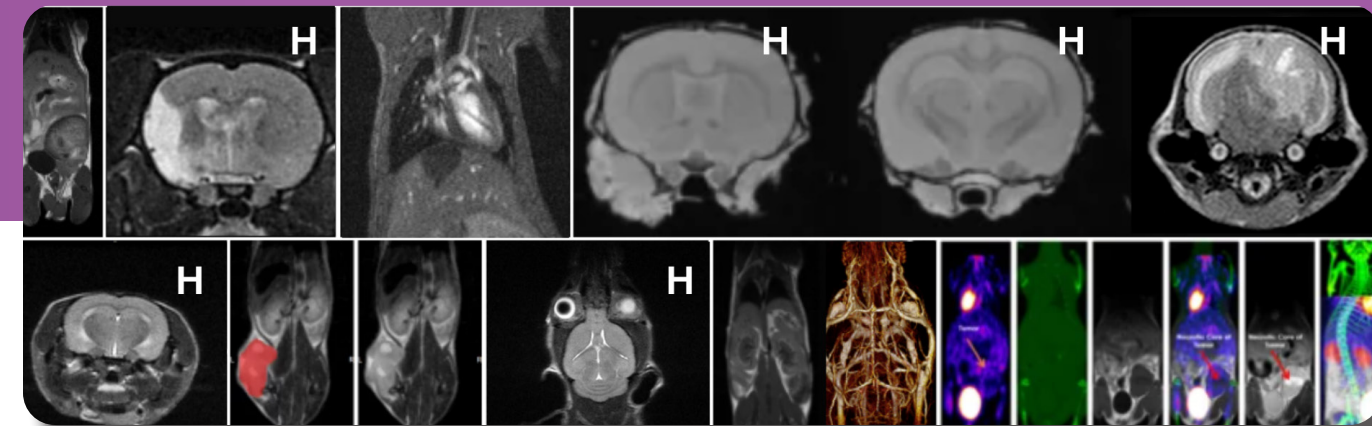
The **M-Series™** MRI systems are cryogen/cooling-free, self-shielded, high-performance MRI systems based on permanent magnet technology. The M-Series systems allow preclinical researchers, with or without in-depth knowledge of MR physics, to utilize the gold standard method in soft tissue imaging without the cost, complexity, and technical burden of superconducting MRI systems.

- Permanent Magnet
- Self-shielded
- User Friendly
- Affordable



### Applications

<b>Anatomy &amp; Morphology</b>	The M-Series systems are adaptable for imaging studies of anatomy, inflammation, metabolic disorders, organ pathology (e.g., liver, kidney), and tissue perfusion with contrasts.
<b>Neurobiology</b>	The M-Series systems are employed to research various neurological conditions like inflammation, stroke, epilepsy, neurodegeneration, tumors, anatomy, cerebral perfusion with contrast-enhanced angiography, molecular imaging using contrasts, and traumatic brain injuries (TBI).
<b>Cancer/Oncology</b>	The M-Series systems come with set T1- and T2- weighted imaging protocols which can be used for rapid tumor detection, tumor phenotyping (necrosis detection), longitudinal assessment of tumor volume for the quantitative assessment of tumor progression and drug response. Functional and molecular imaging approaches, with or without contrast agents, can be further used to characterize tumor microenvironment including vascular haemodynamics and hypoxia.
<b>Cardiovascular Biology</b>	M-Series systems enable diverse cardiac imaging, assessing parameters like volume, ejection fraction, wall characteristics, strain, torsion, and perfusion, including challenging areas like atria. It accommodates easy imaging of the entire heart and vasculature, with contrast angiography, simplifying slice prescription for consistent longitudinal studies.
<b>Ex Vivo Imaging</b>	<i>Ex vivo</i> MRI offers fast high-resolution imaging of formalin-fixed tissues, detecting and quantifying lesions in organs, especially the brain. It aids in guiding histopathological processing for conventional examination, ensuring accurate region of interest analysis, and enabling precise lesion detection and volume quantification.



### Multi-modal Imaging

Multi-modal imaging enhances understanding of disease and compound effects. The M-Series supports PET/MRI with the SimPET insert and a custom cassette, allowing simple registration with many other modalities through third party software including Vivoquant and Imalytics (p25-26).

### Contrast Agents

T1 and T2 contrast agents (Gd, Mn, iron oxide nanoparticles) enable further functional and molecular imaging applications including perfusion imaging with dynamic contrast enhanced (DCE-) MRI, Cardiac MR (infarct size, viability) and stem cells tracking. The M-series provide the optimal magnetic field for molecular imaging with significantly higher signal enhancement at 1T compared to higher field (>3T).



Specifications Front End (Magnet)	M3	M5	M7	M12
<b>Dimensions:</b>	1080 x 734 x 734 mm 42.5 x 29 x 29 inches	1133 X 800 x 800 mm 44.6 x 31.5 x 31.5 inches	1320 x 790 x 950 mm 52 x 31 x 37.5 inches	1810 x 1450 x 1710 mm 71.26 x 57.09 x 67.32 inches
<b>Weight:</b>	650 kg / 1,430 lbs	950 kg / 2,095 lbs	1,550 kg / 3,415 lbs	5,500 kg / 12,125 lbs
<b>Magnet Opening Flange Insertion Diameter Inner Bore (H x W):</b>	70 mm / 2.8 inches 50 x 130 mm / 2 x 5.1 inches	No insertion flange in M5 (Bore is open) 76 x 200 mm / 3 x 7.9 inches	97 mm / 3.8 inches 220 x 90 mm / 8.6 x 3.5 inches	184 x 260 mm / 7.2 x 10.2 inches
<b>Imaging Volume:</b>	80 x 80 x 35 mm <sup>3</sup> spheroid	90 x 90 x 60 mm <sup>3</sup> spheroid	120 x 120 x 70 mm <sup>3</sup> spheroid	120 x 130 x 130 mm <sup>3</sup> ellipsoid
<b>B<sub>0</sub> (Tesla):</b>	1T	1T	1T	1T

# PET INSERT

## SimPET



The **SimPET** is a compact and SiPM-based small animal PET system for hybrid (simultaneous) imaging and stand-alone use with high image quality and exceptional PET performance.

PET & PET/MR imaging with a compact design and low power consumption.

- Simultaneous or standalone operation
- Fast installation
- Low maintenance cost
- Low power consumption

### Applications

#### Oncology

- Cell proliferation
- Apoptosis
- Angiogenesis
- Metastasis
- Gene expression

#### Neurology

- Biodistribution of a specific target
- Cerebral blood flow
- Cerebral metabolic rate
- Availability of specific receptors in the brain
- Dopamine transmission
- Plasma membrane transporters
- Receptor binding sites

#### Immunology & Infectious Diseases

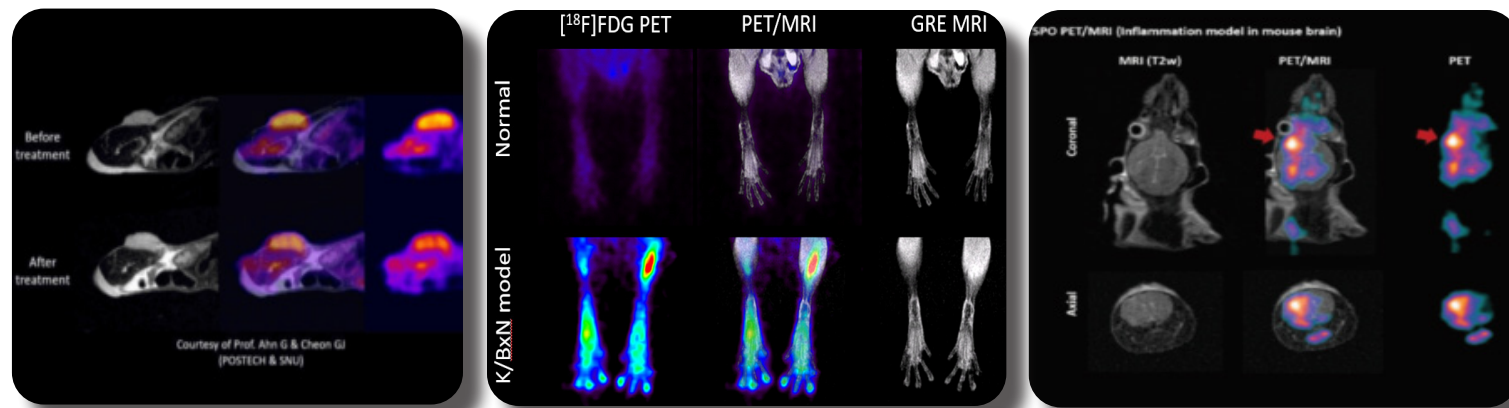
- Understanding disease progression and pathogenesis
- Diagnosis of disease, by targeting the specific pathogenic agent
- Studying therapeutic efficacy of target compounds

#### Cardiology

- Myocardial perfusion to examine the extent of stenosis and severity of obstruction
- Myocardial metabolism
- Myocardial viability
- Infarct assessment
- Calcium scoring in coronary artery disease
- Inflammation and plaque development for risk stratification

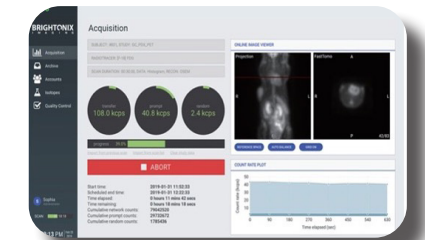
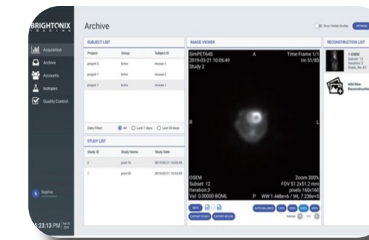
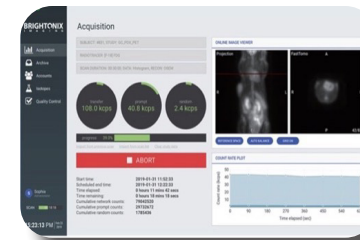
#### Dynamic Imaging

#### Bone Studies & Other Diseases

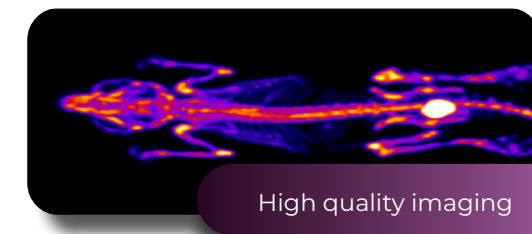
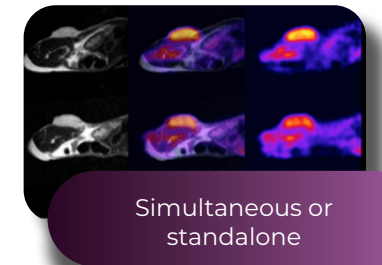
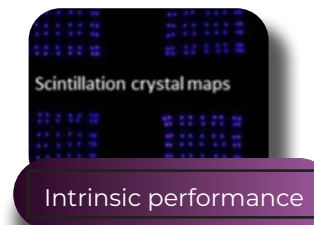


### Features & Specifications

- Real-time count rate monitoring
- Real-time FastTomo reconstruction
- Flexible list-mode data acquisition
- In-line image reconstruction
- Post reconstruction with MRI-based AC Bq/ml or SUV
- Easy quality control and calibration
- PET/MR geometric calibration
- Count rate/activity cross-calibration



Parameter	SimPET-S	SimPET-X	SimPET-L	SimPET-XL
<b>Axial FOV (cm):</b>	5.5	11	5.5	11
<b>Sensitivity (%):</b>	4.7	8.1	4.0	7.4
<b>Insert inner diameter (cm):</b>	6.0		7.6	
<b>Insert outer diameter (cm):</b>	9.9		11.2	
<b>Spatial Resolution (mm):</b>	<1			
<b>Energy Resolution (%):</b>	10			
<b>Crystal Material:</b>	LSO			
<b>Crystal Dimension (mm<sup>3</sup>):</b>	1.2 x 1.2 X 10			





# SPECT/PET eyes Series



The **eyes series** screening tools are engineered for high-throughput, allowing researchers to process a large number of compounds in a remarkably short time.

## Applications

### Cancer Research

PET and SPECT can be used in cancer research applications in many ways like confirming the presence of tumors, monitoring the growth/size of tumors, detecting metastasis, detect the expression of specific biomarkers.

### Theranostics

Many PET and SPECT compounds are being made which are considered to be both therapeutic and diagnostic at the same time.

### Biomarker Detection

Targeted probes can be used to image specific biomarkers, for example: inflammation angiogenesis, hypoxia, etc.

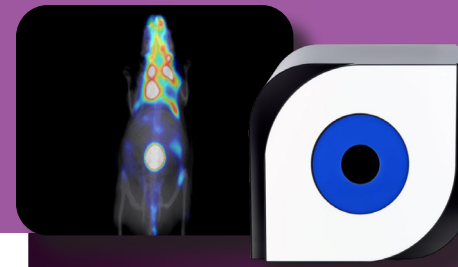
### Pharmacokinetics/Dynamics/ Biodistribution

Labelled compounds can be used to detect the pharmacokinetics, pharmacodynamics, and biodistribution of the compound over time after administration to the imaging subject.



## Features & Specifications

<b>Real-time imaging:</b> From time zero post injection	Immediate feedback to the user if the injection was successful and the radioisotope can be imaged within the imaging subject.
<b>Active field of view:</b> 50 mm x 100 mm	This field of view is suitable for whole-body mouse imaging, allowing for continuous and dynamic imaging in a single acquisition.
<b>Frame rates:</b> Down to 10 seconds	Real time, whole body, mouse imaging – these acquisition times would allow the kinetics and dynamic distribution of the imaging compound to be followed over time.
<b>Small footprint:</b> 44 cm x 46 cm x 40 cm <b>Weight:</b> Less than 40 kg	True benchtop system, due to small size, weight and footprint.
<b>All-in-one:</b>	Animal handling system with integrated anaesthesia delivery, heated bed, and option to monitor vital signs.
<b>White Light Image &amp; Artificial X-ray:</b>	A white light image is acquired and an artificial x ray is adapted to each imaging subject.
<b>Rapid Scanning:</b>	The systems provide rapid screening and visualization of the data during acquisition.
<b>Analysis Software:</b>	The analysis software is user-friendly and the data can be quickly processed and exported after scan completion.
<b>Complete Lab:</b>	The systems provide a complete solution for your workflow from radio TLC, in vivo imaging, to biodistribution of ex vivo tissue samples.
<b>Easy-to-use:</b>	Easy-to-use system and simplified workflow.

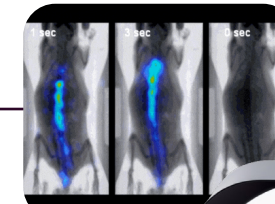


# β-eye

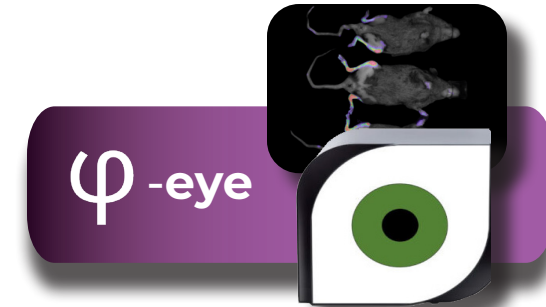
A benchtop imaging scanner for *in vivo* screening of PET radioisotopes

- Time of flight capabilities enable excellent signal to noise ratio.
- Advanced electronics are integrated within the system.
- This system has the capability for tomographic slices.
- Minimal maintenance is required.
- High precision real-time imaging without the cost of time-consuming post-processing routines.

### State-of-the-art technical characteristics:

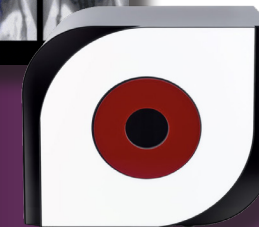


Sensitivity that reaches 5%
Spatial resolution near 1.2 mm
Time of flight (TOF) capabilities
Energy resolution of 11.8% at 511 keV
Dynamic range from 0.1 – 10 MBq



# ψ-eye

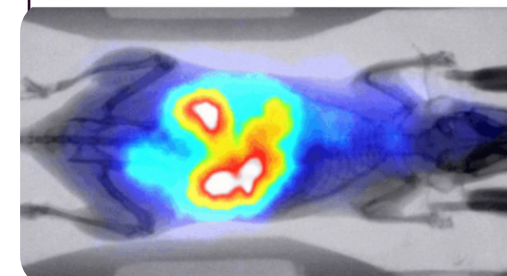
A benchtop *in vivo* optical imaging system for fluorescence and bioluminescence imaging



# γ-eye

A preclinical scanner for *in vivo* whole-body mouse imaging of all SPECT isotopes radioisotopes

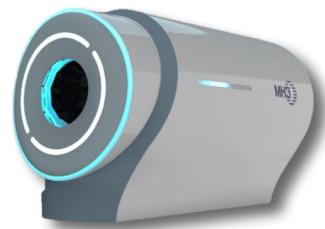
Exchangeable collimators	<ul style="list-style-type: none"> <li>• General purpose collimator</li> <li>• High resolution collimator</li> <li>• High sensitivity collimator</li> <li>• High energy collimator</li> </ul>						
The broad detectable energy range of 35 keV-500 keV allows compatibility with a wide variety of isotopes.							
The dynamic range from 0.01 to 200 MBq allows significant flexibility in the amount of tracer/energy that can be detected.							
A larger field of view version is available which accommodates 4 mice or 1 rat							
State-of-the-art technical characteristics:	<table border="1"> <tr> <td>Sensitivity of 341 cps/MBqww</td> </tr> <tr> <td>Spatial resolution up to 1.9 mm</td> </tr> <tr> <td>eEnergy resolution below 19%</td> </tr> <tr> <td>Dynamic range from 30 keV – 500 keV</td> </tr> <tr> <td>Exchangeable collimators</td> </tr> <tr> <td>Provides high sensitivity images across the whole field of view, over a broad range of signal intensities.</td> </tr> </table>	Sensitivity of 341 cps/MBqww	Spatial resolution up to 1.9 mm	eEnergy resolution below 19%	Dynamic range from 30 keV – 500 keV	Exchangeable collimators	Provides high sensitivity images across the whole field of view, over a broad range of signal intensities.
Sensitivity of 341 cps/MBqww							
Spatial resolution up to 1.9 mm							
eEnergy resolution below 19%							
Dynamic range from 30 keV – 500 keV							
Exchangeable collimators							
Provides high sensitivity images across the whole field of view, over a broad range of signal intensities.							





# MH3D Alpha-SPECT mini

## SPECT



The Alpha-SPECT mini is a high-performance SPECT imaging system for preclinical research (mice and rats).

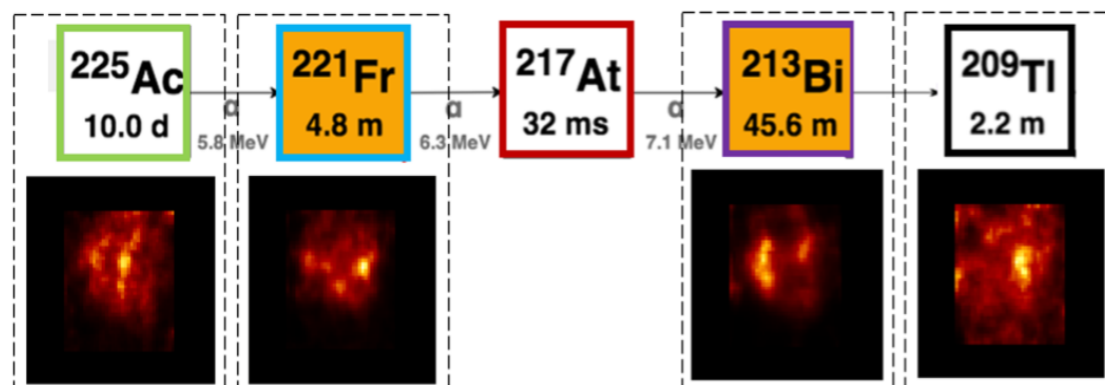
It features high performance CZT sensors providing an unparalleled energy resolution.

The scanner offers an ultra-wide stationary FOV to allow for TRU whole-body dynamic scanning of both mice and rats. This allows for imaging up to 4 mice simultaneously.

This is a first in its class SPECT scanner with exceptional sensitivity, resolution, and many unique features.

### Applications

- Theranostics
- Spectral Imaging
- Oncology
- Cardiology
- Drug Development
- Dynamic Development
- Metabolic & Bond Diseases



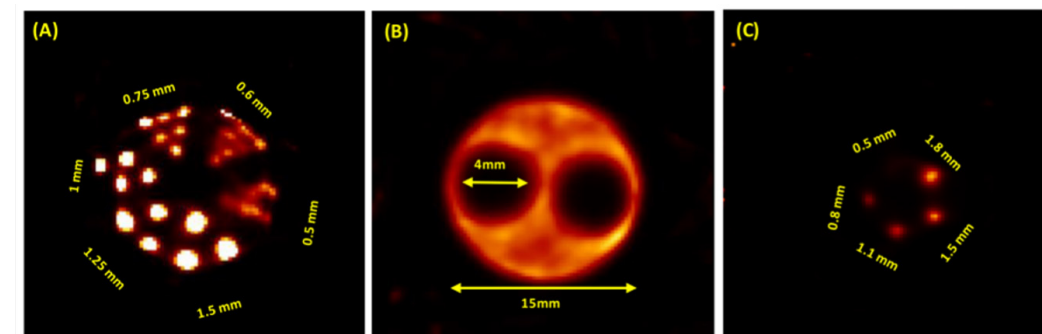
### Features & Specifications

<b>Unparalleled Energy Resolution:</b>	E.g., 2.5 keV at 140 keV), Ideally suited for multi-isotope imaging
<b>Ultra-wide Stationary FOV:</b>	6 cm x up to 12 cm For TRUE whole-body dynamic mouse and rat studies
<b>Stationary Multi-animal Imaging:</b>	4 mice imaging capability for high throughput
<b>Ultra-high Spatial Resolution:</b>	0.25 mm
<b>Modular Design:</b>	Customer-selectable imaging configurations : 6 cm x 6 cm, OR 6 cm x 9 cm and 6 cm X 12 cm
<b>User-programmable Dual-FOV:</b>	Aperture for adaptive whole-body/microscopic imaging

	Truly Stationery FOV	Spatial Resolution	Sensitivity (cps/MBq)	Energy Resolution @140 keV	Bore Size
<b>Hi-Res, Mouse</b>	D 30 mm x L 40 mm	STD: 0.5 mm HR: 0.25 mm	STD: 2500 (0.25%) HR: 1500 (0.15%)	STD: 2.5 keV, CZT (UHER: 1.5keV, CdTe)	12 cm
<b>Large-FOV, Rat</b>	D 60 mm x L 90 mm	1	5000 (0.5%)	2.5 keV	12 cm

### Phantom Images

Tc-99m IQ Phantom Images



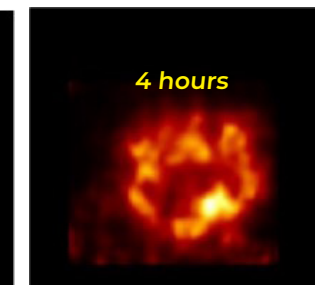
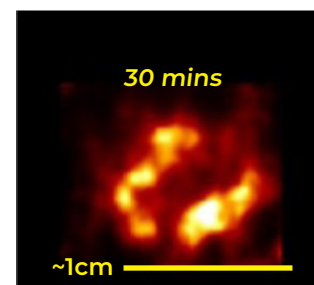
### Preliminary Mouse



#### Experiment 1:

Unbonded Ac-225 in mouse, 1.5 µCi

- Alpha-SPECT-mini with dedicated high-E collimator
- *In vivo* Imaging of Ac-225 in mouse
- E-window: ~80 keV, (Pb-209, Fr-221, Tl-209, etc.)
- Unbonded Ac-225, 1.5 µCi total
- Imaging time: 30 mins
- Most of the Ac-225 and daughters appears to go to the bone and kidney



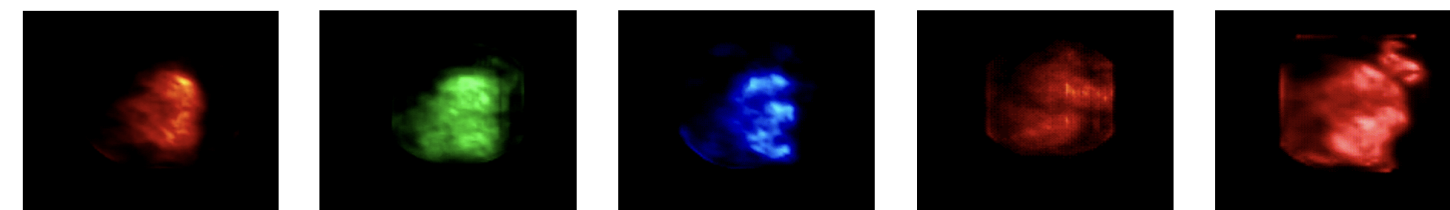
#### Experiment 2:

Ac-225-labelled antibody in tumor

- Distribution of Ac-225-labeled antibody in tumor
- Energy window: 5 keV around 218 keV (Fr-221)ey

#### Experiment 3: Ac-225-labelled antibody in tumor

Experiment 3 conditions are identical to Experiment 2



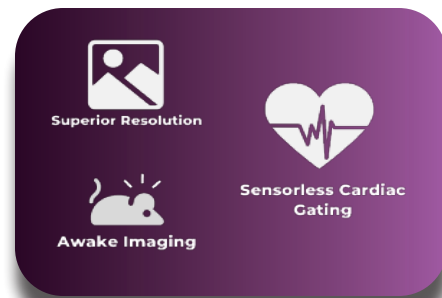
79.3keV, overall    100keV, Ac-225    218keV, Fr-221    117keV, Tl-209    440keV, Bi-213

# PET/CT SUPERARGUS



The **SuperArgus PET/CT** is a high-performance imaging system for preclinical research that can be configured as a combined PET/CT or PET or CT only system. It features state-of-the-art phoswich PET detectors with true depth-of-interaction (tDOI) for resolution uniformity and high sensitivity.

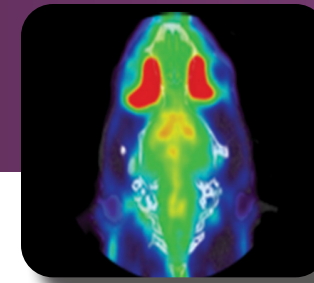
The system offers real-time imaging up to 2.5 ms frame rate and advanced capabilities like sensorless cardiac gating and conscious/awake imaging.



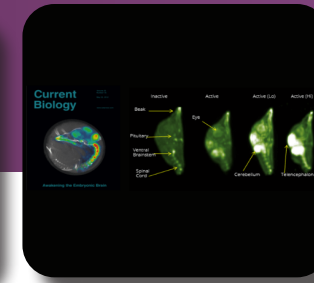
- Real-time Imaging
- Sensorless Cardiac Gating
- Multiplex Imaging (mPET)
- Conscious/Awake Imaging
- Multi-animal Imaging
- Multiplexed Imaging (mPET)

## Applications

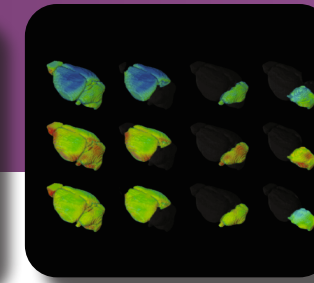
<b>Oncology</b> <ul style="list-style-type: none"> <li>• Cell proliferation</li> <li>• Apoptosis</li> <li>• Angiogenesis</li> <li>• Metastasis</li> <li>• Gene expression</li> <li>• Receptor-ligand interaction</li> </ul>	<b>Cardiology</b> <ul style="list-style-type: none"> <li>• Myocardial perfusion</li> <li>• Myocardial metabolism</li> <li>• Infarct</li> <li>• Coronary artery disease</li> <li>• Inflammation and plaque development</li> </ul>
<b>Neurology</b> <ul style="list-style-type: none"> <li>• Cerebral blood flow</li> <li>• Cerebral metabolic rate</li> <li>• Neurological receptors</li> <li>• Plasma membrane transporters</li> <li>• Receptor binding sites</li> </ul>	<b>Dynamic Imaging 4D/3D</b> <ul style="list-style-type: none"> <li>• Time Activity Curves</li> <li>• Radiotracer accumulation</li> <li>• Biodistribution kinetics</li> </ul>
<b>Metabolic and Bone Diseases</b> <ul style="list-style-type: none"> <li>• Rickets</li> <li>• Rheumatoid arthritis</li> <li>• Metabolic disorders</li> <li>• Osteoporosis</li> <li>• Osteomalacia</li> </ul>	<b>Drug Development</b> <ul style="list-style-type: none"> <li>• Target concentrations</li> <li>• Kinetics</li> <li>• Biodistribution</li> </ul> <b>Theranostics</b> <ul style="list-style-type: none"> <li>• Multiplexed PET (mPET)</li> </ul>



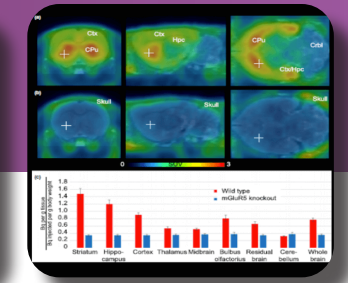
MPET



Awake Imaging



Neuro Imaging



Biodistribution

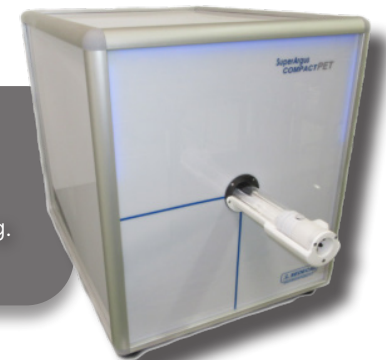
## Features & Specifications

<b>Resolution:</b>	• Superior resolution - $\leq 1.0$ mm
<b>Detector:</b>	• Phoswich PET Detector with tDOI (true Depth-of-Interaction)
<b>Sensitivity:</b>	• 11% Sensitivity at 100 to 700 keV
<b>Animal Handling:</b>	<ul style="list-style-type: none"> <li>• Integrated temperature control and physiological monitoring</li> <li>• Cardiac and respiratory gating</li> <li>• Anaesthesia control</li> <li>• Animal transfer bed</li> </ul>
<b>CT:</b>	• Low dose radiation/fast scan times

Systems can be configured as standalone PET systems or incorporated with computed tomography (CT)

## Argus Compact PET or CT

- The Compact PET & CT systems are alternatives to the SuperArgus PET/CT.
- The Compact PET system incorporates the same state-of-the-art detectors and electronics as the SuperArgus system.
- The compact systems have a bore size of 55 mm making it ideal for mouse imaging.
- There is a common bed to transport the animal between imaging systems.



Model	2r	4r	6r	2R	4R	6R	2P	4P	6P
-------	----	----	----	----	----	----	----	----	----

<b>Fixed axial field of view (mm):</b>	50	100	150	50	100	150	50	100	150
<b>Dynamic axial field of view:</b>	220	220	220	350	350	350	650	650	650
<b>Transaxial field of view (mm):</b>	80	80	80	120	120	120	210	210	210
<b>Bore Size (mm):</b>	90	90	90	160	160	160	260	260	260
<b>Number of PET Rings:</b> <small>(3 &amp; 5 ring options available)</small>	2	4	6	2	4	6	2	4	6
<b>Number of Detectors:</b>	28	56	84	48	96	144	64	128	192
<b>Number of DOI Crystals:</b>	9464	18928	28392	16224	32448	48672	21632	43264	64896



# PHOTOACOUSTIC TOMOGRAPHY

## TRITOM

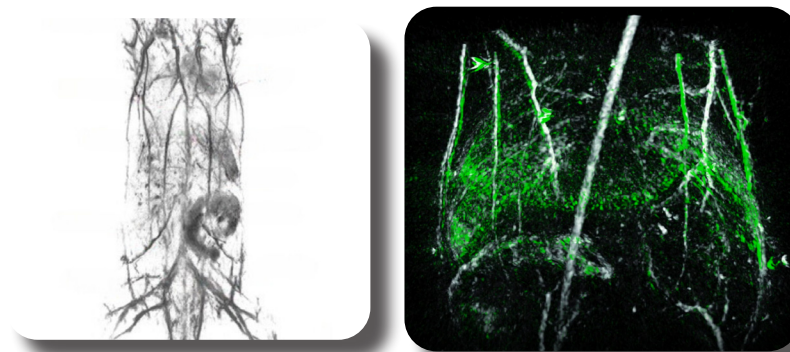


The **TriTom** imaging platform utilizes photoacoustic and fluorescence tomographies (PAFT) to enable high-resolution (up to 160  $\mu\text{m}$ ) non-invasive *in vivo* whole-body imaging of small animals.

With the ability to use multiple excitation wavelengths per scan, the multi-modality system can simultaneously acquire photoacoustic and fluorescence data in large volumes ( $> 25 \text{ cm}^3$ ) allowing for spectroscopic molecular analysis within the region of interest.

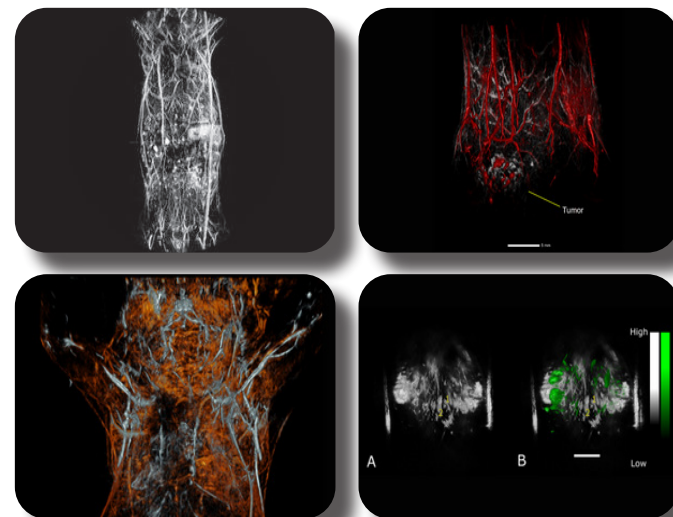
In addition to 3D molecular maps, the TriTom enables spatially-resolved assessment of physiologic parameters *in vivo*, such as volumetric blood content and oxygenation without the need for contrast agents. The TriTom provides quantitative imaging for a wide range of fluorophores and other molecular probes excited between 460 nm and 1320 nm.

Small Animal Whole Body  
Photoacoustic and Fluorescence  
Molecular Imaging Platform



### Applications

- Anatomical Imaging/Registration
- Oncology Research
- Tissue Engineering and Regeneration
- Developmental Biology
- Neuroscience
- Development of Molecular Probes, Optical Contrast Agents, and Fluorophores



### Features & Specifications

#### Resolution

Deep tissue quantitative imaging with a high spatial resolution (up to 160  $\mu\text{m}$ ).

#### Whole-body *In Vivo* Small Animal Imaging

Mice and rats ( $< 200 \text{ g}$ ) can be imaged as a stack of 3D volumes for whole-body imaging.

#### Laser Optical Excitation

Easy-to-use nanosecond laser provides stable high-power excitation, wide wavelength tuning range (with fast wavelength switching), little to no warm-up time, and quantifiable results.

#### High Throughput

Fast ( $< 36 \text{ s}$ ) imaging scans of large ( $> 25 \text{ cm}^3$ ) volumes simultaneous assessment of multiple (up to 10x) microsamples of contrast agents

#### Animal Handling

- Integrated gas anaesthesia
- Adjustable mouse holder
- Temperature-controlled imaging chamber
- Repeatable positioning for longitudinal studies

#### Software

User friendly, integrated software.

#### System

- Size: 78 cm x 35 cm x 70 cm
- Laser unit is separate
- Light-tight imaging chamber and laser interlocks.

#### PhotoAcoustic (PA) Imaging Channel

Model:	Basic	Premium
Type:	3D (High-resolution deep tissue molecular, physiological, and anatomical imaging, subcutaneous & skin imaging)	
Spatial Resolution:	160 $\mu\text{m}$ x 160 $\mu\text{m}$ - Transverse anatomical planes 160 $\mu\text{m}$ x 470 $\mu\text{m}$ - Sagittal and coronal anatomical planes	
Molecular Imaging Sensitivity:	100 nM ICG in blood plasma Multi-species molecular unmixing CNR 1.7	
PA Excitation Range:	532 nm & 650 - 1320 nm	460 - 1320 nm
Laser Pulse Repetition Frequency:	20 Hz	
Peak Pulse Energy:	160 mJ @ 700 nm	130 mJ @ 700 nm
Detection Points Per Scan:	$> 69,000$ (Single scan, 360 deg azimuthal rotation)	
Detector Configuration:	Curve-linear array Scanned 360 deg	
Detector Characteristics:	96 Elements 6 MHz $\pm 10\%$ $\geq 55\%$ bandwidth @ -6 dB	
PA Signal Digitizer:	12-bit dynamic range 40 MHz sampling rate Programmable amplifier from 46-91 dB	

#### Fluorescence (FL) Imaging Channel

Model:	Premium
Type:	3D or Real-time 2D
Spatial Resolution:	170 $\mu\text{m}$ x 125 $\mu\text{m}$ (At the skin level of a live test subject)
FL Excitation Range:	460 - 800 nm
Excitation Line Width:	$< 1 \text{ nm}$ (equivalent to employing 150 extremely narrow band excitation filters)
Emission Filter Set:	<ul style="list-style-type: none"> <li>• 8 filters covering emission range between 510 nm and 995 nm</li> <li>• 2 additional filter slots available</li> </ul>
Detector Type:	Back-illuminated sCMOS
Bit Depth:	16-bit
Max Frame Rate:	40 fps



# OPTICAL (BLI/FLI) NEWTON 7.0



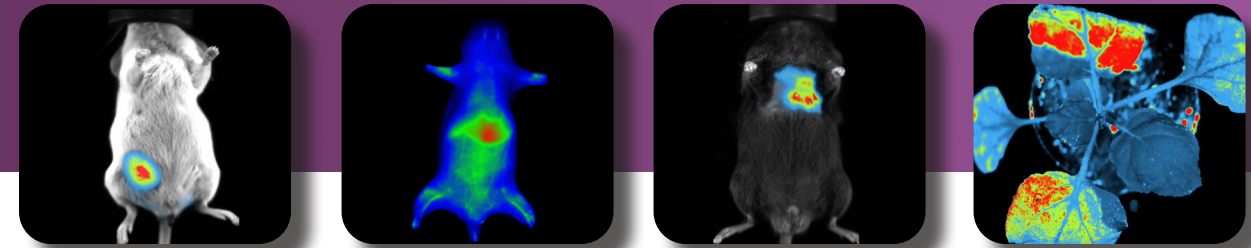
The **Newton 7.0** is a cutting-edge optical imaging system that offers the versatility to perform bioluminescence, fluorescence, and 3D tomographic imaging in a single device. The user-friendly interface and advanced features make it ideal for *in vivo*, *ex vivo*, and *in vitro* imaging applications, as well as simultaneous imaging of multiple specimens.

The system features a state-of-the-art camera that boasts one of the widest lens apertures on the market. This camera provides excellent sensitivity for a variety of luciferase enzymes and fluorophores commonly used in preclinical research, allowing for fast and efficient signal acquisition. The intuitive workflow and user-friendly software are optimized for multi-user use, saving valuable time in longitudinal studies.



## Applications

<b>Oncology</b>	Optical imaging can be used to non-invasively monitor the progression and spread of cancer throughout the body in preclinical animal models.
<b>Immunology</b>	Monitoring various populations of immune cells can contribute significantly to the understanding of their physiology and the development of new therapeutic strategies.
<b>Infectious disease</b>	Optical imaging can be used to non-invasively visualize a site of infection as well as the efficacy of a treatment in the context of living subject.
<b>Neurology</b>	Optical imaging can be used to monitor the progression of various neurodegenerative diseases as well as to test novel targeted therapeutics within the brain and spinal cord.
<b>Biodistribution studies</b>	The ability to image the whole subject, gives optical imaging a unique advantage in preclinical biodistribution studies, one image can provide measurements for multiple organs throughout the body.



## Features & Specifications

<b>Full Spectrum Tunability:</b>	<ul style="list-style-type: none"> <li>8 excitation channels</li> <li>8 narrow bandpass emission filters as standard</li> <li>11 position filter wheel</li> </ul>
<b>Fluorescent Excitation:</b>	<ul style="list-style-type: none"> <li>8 excitation channels across the visible and near-infrared spectrums</li> <li>2 powerful Laser Class II arrays control the illumination light</li> </ul>
<b>3D Optical Tomography:</b>	<ul style="list-style-type: none"> <li>Integrated 3D tomography module with overlay on a topographical model of the imaging subject</li> </ul>
<b>Motorized Darkroom:</b>	<ul style="list-style-type: none"> <li>Fully motorized movement of the camera (Z-axis) and animal pad (X/Y axis) with adjustable FOV</li> </ul>
<b>Acquisition and Analysis Software:</b>	<ul style="list-style-type: none"> <li>License-Free</li> <li>User Friendly</li> <li>Fully GLP and CFR21-compliant</li> <li>Data export at 16-bit .tiff or 8-bit .jpg format</li> </ul>

### Camera

#### All Models

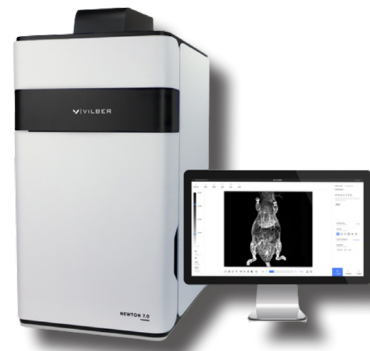
- Scientific 16-bit CCD Sensor
- 2160x2160 (4.6 MP)
- 8.6µm x 8.6µm pixel size
- Dynamic Range 4.8 O.D
- 10 MP Image Resolution

#### All Models

**Cooling** -90°C  
**Lens** f/0.70  
**BLI** Yes

Models	BT 100	FT 100	BT 500	FT 500	Bio
<b>VIS/NIR Fluorescence:</b>	Upgradeable	Upgradeable	400 > 900 nm	400 > 900 nm	400 > 900 nm
<b>Emission Filters:</b>	4 Narrow Band-pass filters included for BLI Tomography: 500/550/600/650 nm		8 Narrow Band-pass filters included: 500/550/600/650/700/750/800/850 nm		
<b>Field Of View:</b>	12 X 12 cm		6 x 6 cm to 20 x 20 cm		6 x 6 cm to 20 x 20 cm
<b>Darkroom:</b>	<ul style="list-style-type: none"> <li>Fixed Camera</li> <li>Fixed Animal Stage</li> </ul>		<ul style="list-style-type: none"> <li>Z-Axis Motorized Camera</li> <li>X/Y-Axis Motorized Animal</li> </ul>		<ul style="list-style-type: none"> <li>Z-axis Motorized Camera</li> <li>15° Tilting Sample Stage</li> <li>Adjustable pot holder</li> </ul>
<b>Animal Capacity:</b>	Up to 3 mice		Up to 5 mice		Not Applicable
<b>Heated Stage:</b>	Yes	Yes	Yes	Yes	Not Applicable
<b>Animal Handling:</b>	<ul style="list-style-type: none"> <li>Heated Mouse Bed</li> <li>Individually Controlled Anaesthesia Manifolds</li> </ul>				Not Applicable

# OPTICAL (NIR-II FLUORESCENCE) NEWTON FT-900

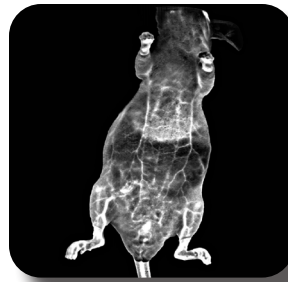


The **NEWTON FT 900** is the first deeply cooled CCD imager dedicated to both fluorescence and bioluminescence multi-spectral imaging as it allows for *in vivo* applications in the visible, near and short-wave infrared spectrum (VIS/ NIR/ NIR-II). Smart and ultra sensitive, it provides non-ionizing and non-invasive visualization of biological processes in real-time.

This cutting-edge optical imaging system facilitates the penetration of NIR-II light deeper into small animal tissue with less autofluorescence resulting in clearer and sharper images.

## Applications

- Tumor and infection monitoring
- Cell migration tracking
- Detailed vascular blood flow maps
- Vasculature and microcirculation visualization
- Biodistribution and pharmacokinetics studies
- Drug dispersion
- Heart rate and breathing



Models	NEWTON FLIR 500	NEWTON IR 500
<b>Bioluminescence:</b>	Ultra-high-sensitivity 2D and 3D Optical Tomography	Not applicable
<b>NIR-II Fluorescence:</b> High photon penetration depth <small>(10x greater than visibleFluorescence)</small>	<ul style="list-style-type: none"> <li>• VIS camera 400-900 nm</li> <li>• InGaAs SWIR camera 900-1700 nm</li> <li>• Monochrome or color imaging mode</li> <li>• From 20 frames per second up to many minutes exposure</li> </ul>	<ul style="list-style-type: none"> <li>• InGaAs SWIR camera 900-1700 nm</li> <li>• Monochrome or color imaging</li> <li>• From 20 frames per second up to many minutes exposure</li> </ul>
<b>Emission Filters:</b>	14 High efficiency filters. Peak emission: 500, 550, 600, 650, 700, 750, 800, 850, 1100, 1200, 1300, 1400, 1500, 1600 nm	6 High efficiency filters. Peak emission: 1100, 1200, 1300, 1400, 1500, 1600 nm
<b>Illumination Sources:</b>	9 Excitations channels: 440, 540, 580, 640, 680, 740, 780, 880, 980 nm	5 Excitations channels: 680, 740, 780, 880, 980 nm
<b>Lens:</b>	Proprietary V.070 lens. f/0.70	
<b>Field Of View:</b>	Maximum: 20 x 20 cm / Minimum: 6 x 6 cm	
<b>Animal Handling:</b>	<ul style="list-style-type: none"> <li>• Individually controlled anaesthesia manifolds</li> <li>• Heated animal bed for 5 mice</li> </ul>	
<b>Acquisition and Analysis Software:</b>	<ul style="list-style-type: none"> <li>• License-Free &amp; user friendly</li> <li>• Fully GLP and CFR21-compliant</li> <li>• Data export at 16-bit .tiff or 8-bit .jpg format</li> </ul>	

# WESTERN BLOT & GEL DOCUMENTATION FUSION



**Fusion systems** are optimal for quantification grade imaging, overcoming challenges in chemiluminescent Western blot data using advanced High Sensitivity Reading camera technology. This provides a robust dynamic range, linearity, and supreme sensitivity, reducing noise for clear signals. Furthermore, they ensure consistent, reproducible data, unaffected by chemiluminescence time courses, with automatic imaging adjustments for optimal image dynamics.



- Advanced camera & optics
- Complimentary software
- Spectral unmixing
- Powerful fluorescence excitation

## Features & Specifications

**Operating**  
All Models  
• PC Based

**Dark Room**  
All Models  
• Stainless steel

**Software**  
All Models  
• Evolution.Capt (free)

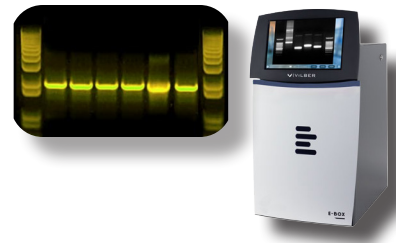
	Fusion FX7	All Models
<b>Optics:</b>	<ul style="list-style-type: none"> <li>• 16-bit Scientific Grade CCD Camera</li> <li>• Grade 0 / 400-900 nm / 4.8 OD</li> <li>• Cooling: -65°C Absolute</li> <li>• Proprietary V.070 – Fixed Focal Length Motorized lens</li> <li>• Aperture: f/0.7</li> <li>• Resolution: 10 Megapixels</li> <li>• Monochrome &amp; Color imaging</li> </ul>	<ul style="list-style-type: none"> <li>• 16-bit Scientific Grade CCD Camera</li> <li>• Grade 0 / 400-900 nm / 4.8 OD</li> <li>• Cooling: -30°C Absolute</li> <li>• Proprietary V.070 – Fixed Focal Length Motorized lens</li> <li>• Aperture: f/0.7</li> <li>• Resolution: 20 Megapixels</li> <li>• Monochrome &amp; Color imaging</li> </ul>

	Fusion FX7 & FX6	Fusion Solo 6S & 6X
<b>Spectra Capsules:</b>	• Capsule Adapter Included	• Capsule Adapter Required

	All Models Except Fusion Solo 6X	Fusion Solo 6S & 6X
<b>Excitation epi-illumination:</b>	<ul style="list-style-type: none"> <li>• 7 Customizable channels Motorized</li> <li>• UV, R, G, B, FR, NIR, DIR</li> </ul>	<ul style="list-style-type: none"> <li>• 4 Customizable channels Non-Motorized</li> <li>• UV, R, G, B, FR, NIR, DIR</li> </ul>
<b>Trans-illumination PAD:</b>	<ul style="list-style-type: none"> <li>• UV-PAD, 312 nm</li> <li>• UV-PAD, 312 nm &amp; 365 nm</li> <li>• Blue-PAD, 270 nm</li> <li>• White-PAD, LED</li> </ul>	

# GEL DOCUMENTATION

## E-BOX



VILBER's **Gel Documentation** systems, made of stainless steel and aluminum, provide superior image quality for DNA and RNA gels using Super-Bright UV illumination and filter technology. These systems utilize fluorescence for gene expression and protein detection, efficiently separating excitation and emitted light to yield optimal sample images. Catering to a wide range of applications, VILBER offers technologies varying from basic to advanced, excelling in sensitivity, speed, and detection of DNA, RNA, and protein.

<b>Super-Bright UV Pad:</b>	DNA/RNA gel and stain imaging agents: Ethidium Bromide, Sybr-Safe, Sybr-Green, Gel-Red/Green, Sybr-Gold, GFP, Pro-Q Emerald, Sypro Ruby, FITC, DAPI.
<b>White Pad/light conversion screen for:</b> Documentation	EPI white light applications (e.g., protein gels, X-Ray film, autorads, SSCP gels, colony/flask imaging): Coomassie Blue, Silver Stain, Autorads, Ponceau S Red, Copper Stain.
<b>Blue Pad for:</b> DNA/RNA detection (prevents DNA "nicking")	Three sets of electrodes make it easy to work with small mice, large rats and many small animals in between.

### Features

- **State-of-the-art camera technology**
- **Free software**
- **One click to image**
- **High contrast medical grade touch screen display with magnesium reinforced protection glass**

# LASER SPECKLE

## RFLSI-ZW



The RFLSI-ZW **laser speckle** imaging system enhances micro-circulation research with advanced optics and algorithms, improving field size, image quality, frame rate, and resolution. Its non-contact LSCI technology provides efficient micro-circulation measurement for human and animal tissues, useful in studies like ischemic stroke and lower limbs. It offers multi-output including high-resolution images, videos, and quantified perfusion and vessel diameter data.

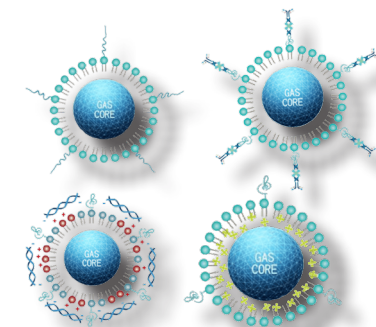
### Applications

- **Reliable Data Measurement**
- **Quantified Visualized Data**
- **Easy Operation**
- **Full-Frame HD Images & Video**
- **High-Speed Camera**
- **Fast Data Acquisition**

<ul style="list-style-type: none"> <li>• <b>Auricle damage repair</b> through vascular regeneration in nude mice</li> <li>• <b>Blood flow response</b> in rat and mouse cerebral cortex somatosensory region</li> <li>• External stimuli-induced light and <b>electrical responses</b> in mouse cortex blood flow</li> </ul>	<ul style="list-style-type: none"> <li>• Research on <b>cerebral ischemia</b>, reperfusion response, and brain injury in rats and mice</li> <li>• Imaging of <b>cerebral blood flow</b> related to cortex physiology and pathology</li> <li>• Various physiological and pathological <b>circulation and metabolism</b></li> </ul>	<ul style="list-style-type: none"> <li>• <i>In vivo</i> imaging of <b>cerebral cortex blood channels</b> in pathological animal models like MCAO</li> <li>• Research on <b>intestinal mucosal vessels</b> and <b>cortical diffusion inhibition</b></li> <li>• Research on <b>lower limb ischemia</b> and vascular survival in rodents</li> </ul>
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# MICROBUBBLE CONTRAST AGENTS

## USPHERE SERIES



The **USphere Series** of microbubble contrast agents are designed for preclinical imaging, catering to various species like mice, rats, rabbits, and non-human primates, effectively working at frequencies from 1 to 40 MHz. With a small size distribution (1.1-1.4 μm) and high concentration (~2.5×10<sup>10</sup> bubbles/ml), they are suitable for diverse applications, including perfusion imaging, targeted biomarkers, multi-modal imaging with fluorescent dyes, targeted drug delivery, and gene transfection.

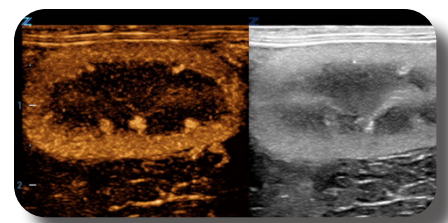
These agents are optimized for small animal imaging, ensuring precise control over particle size and providing detailed perfusion information for tumor and organ imaging, drug development studies, and more.

### Applications

<p><b>Perfusion Imaging</b></p> <p>USphere Prime</p>	<p><b>Targeted Molecular Imaging</b></p> <p>USphere Labeler</p>	<p><b>Multi-modal Imaging</b></p> <p>USphere Tracer</p>	<p><b>Drug Delivery &amp; Gene Transfection</b></p> <p>USphere Trans+</p>
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### Features & Benefits

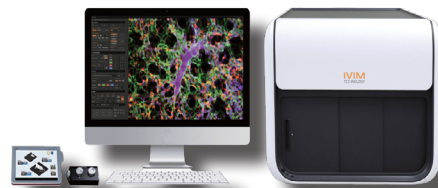
<b>High concentration of microbubbles</b> per ml of activated contrast agent (~2.5×10 <sup>10</sup> bubbles/ml)	Recommended microbubble injection volume (1-20 μL) for small animals like mice or rats balances contrast enhancement and circulatory system safety. Dilution with sterile saline enables precise delivery in small amounts.
<b>Small size distribution</b> (1.1-1.4 μm) of activated microbubbles	Microbubble's small size ensures accurate microvasculature perfusion characteristics.
Once activated, the <b>microbubble concentration is stable for 72 hours</b> , when stored at 2-8°C	Microbubble stability for 3 days enables efficient utilization without wastage during required studies.
Microbubbles work at a <b>wide range of frequencies</b> (1-40 MHz)	Microbubbles are versatile and suitable for various species, including mice, rats, rabbits, non-human primates, and pigs, and have been successfully used on different ultrasound systems, supporting both linear and non-linear/harmonic contrast imaging modes.





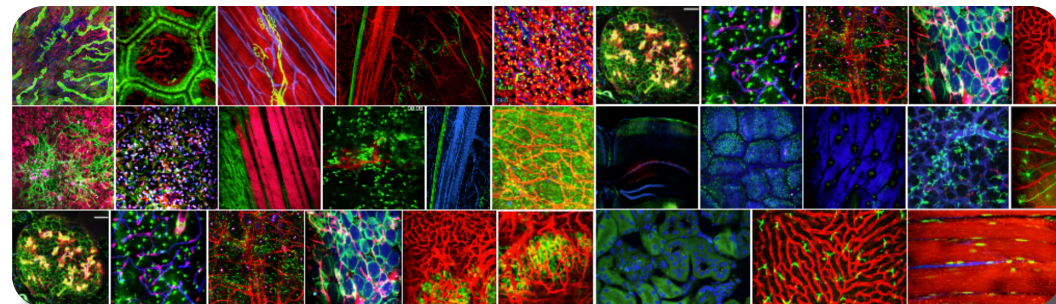
# INTRAVITAL MICROSCOPY

## IVM



**Intravital Microscopy (IVM)** is an all-in-one two-photon and/or confocal microscopy system designed and optimized for longitudinal imaging of live animal models.

Confocal IVM systems enable 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.



Animal well-being    Motion Compensation

User Friendly    4D Imaging

### Features & Benefits

**Integrated Heated Animal Stage with Physiological Controller & Inhalation Anaesthesia Inlet/Outlet:** Ensures animal well-being throughout the imaging session and consistency between animals within a study, while enabling connection to an external inhalation anaesthesia machine. It is compatible with all universal anaesthesia machines.

**User-Friendly Ergonomics & User Interface:** Allows for ease of use, and reproducible results by experts and non-experts.

**Fast to Ultrafast Scanning:** Track the movement of several cells *in vivo* to better understand the biological processes being examined.

**Motion Compensation Function:** Provides enhanced image quality on imaging dynamic organs, automatically compensating for the effects of respiratory motions and brain pulse.

**Animal Stabilizing Holders & Hardware:** Quick, secure stabilization of the animal on the stage for time-lapse and longitudinal imaging, minimizing motion artifacts.

**4-color Simultaneous Imaging:** Multiplexity and simultaneous monitoring of various labelled elements within the tissue.

**4D Imaging:** The software allows for acquisition of 3D stacks of moving objects over time and rendering it as a 4D image.

### Models IVM-C3 | IVM-M3 | IVM-CM3 | IVM-MS3 | IVM-CMS3

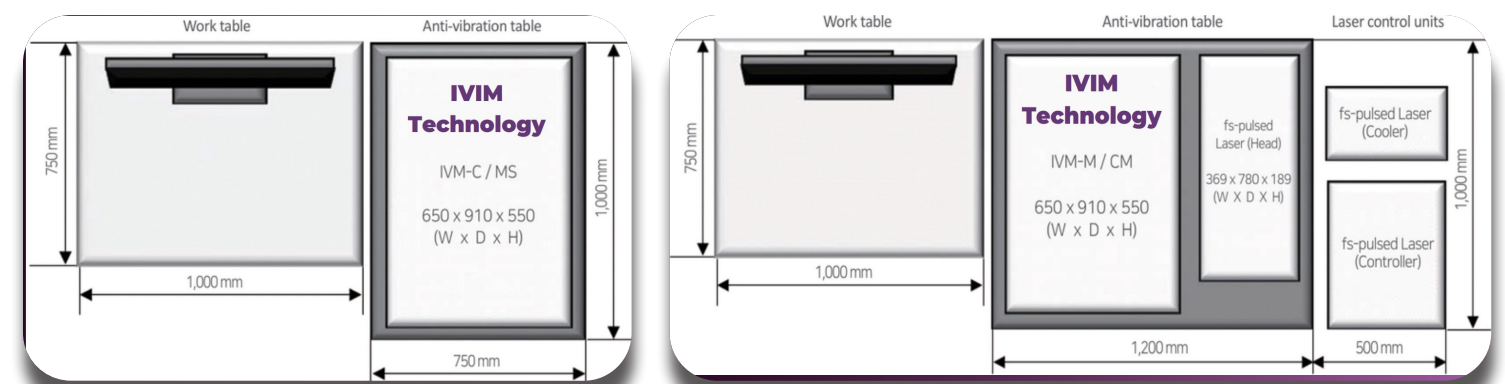
Model	IVM-C3	IVM-M3	IVM-CM3	IVM-MS3	IVM-CMS3
<b>Laser Type:</b>	Confocal Laser Unit	Tunable Two-Photon Laser Unit	Confocal Laser Unit Tunable Two-Photon Laser Unit	Compact Two-Photon Laser Unit	Confocal Laser Unit Compact Two-Photon Laser Unit
<b>Wavelength:</b>	405 nm (20 mW), 488 nm (20 mW), 561 nm (20 mW), 640 nm (20 mW)	690 – 1,050 nm	<b>For Confocal</b> 405 nm (20 mW), 488 nm (20 mW), 561 nm (20 mW), 640 nm (20 mW) <b>For Two-Photon</b> 690-1,050 nm	Fixed 920 nm	<b>For Confocal</b> 405 nm (20 mW), 488 nm (20 mW), 561 nm (20 mW), 640 nm (20 mW) <b>For Two-Photon</b> Fixed 920 nm

Model	IVM-C3	IVM-M3	IVM-CM3	IVM-MS3	IVM-CMS3
<b>Fluorescence Detector:</b>	<b>Confocal Detector</b> Wavelength: 185 – 900 nm (DAPI, CFP, GFP, YFP, RFP, Cy5, Cy5.5, etc.) 4 Ultra-broadband high SNR PMTs (UV to Near IR, Ultra High Sensitivity, Low Dark Current) 25-2000 µm variable pinhole	<b>Two-Photon Detector</b> Wavelength: 185 – 760 nm (DAPI, CFP, GFP, YFP, RFP, Cy5, Cy5.5, etc.) 4 High quantum efficiency PMTs (UV to Near IR, Ultra High Sensitivity, Low Dark Current) 4 Ultra-broadband high SNR PMTs (UV to Near IR, Ultra High Sensitivity, Low Dark Current) 25-2000 µm variable pinhole	<b>Confocal Detector</b> Wavelength: 185 – 900 nm (DAPI, CFP, GFP, YFP, RFP, Cy5, Cy5.5, etc.) 4 Ultra-broadband high SNR PMTs (UV to Near IR, Ultra High Sensitivity, Low Dark Current) 25-2000 µm variable pinhole <b>Two-Photon Detector</b> Wavelength: 185 – 760 nm (DAPI, CFP, GFP, YFP, RFP, Cy5, Cy5.5, etc.) 4 High quantum efficiency PMTs (UV to Near IR, Ultra High Sensitivity, Low Dark Current)	<b>Two-Photon Detector</b> Wavelength: 185 – 760 nm (DAPI, CFP, GFP, YFP, RFP, Cy5, Cy5.5, etc.) 4 High quantum efficiency PMTs (UV to Near IR, Ultra High Sensitivity, Low Dark Current)	<b>Confocal Detector</b> Wavelength: 185 – 900 nm (DAPI, CFP, GFP, YFP, RFP, Cy5, Cy5.5, etc.) 4 Ultra-broadband high SNR PMTs (UV to Near IR, Ultra High Sensitivity, Low Dark Current) 25-2000 µm variable pinhole <b>Two-Photon Detector</b> Wavelength: 185 – 760 nm (DAPI, CFP, GFP, YFP, RFP, Cy5, Cy5.5, etc.) 4 High quantum efficiency PMTs (UV to Near IR, Ultra High Sensitivity, Low Dark Current)

**Variable Emission Filter:** (Optional)  
6 or 2 emission filters can be mounted on each of four detectors

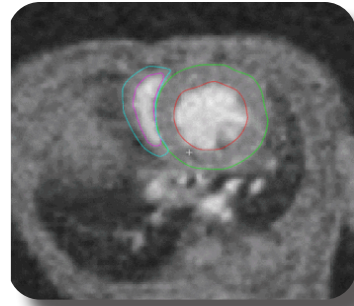
Model	IVM-C3	IVM-M3	IVM-CM3	IVM-MS3	IVM-CMS3
<b>ScanHead - All Models</b>	<b>Scanner:</b> <ul style="list-style-type: none"> <li>Polygonal mirror (Fast axis scanning, Max. 66 kHz)</li> <li>Galvano scanner (Slow axis scanning, Max. 200 ms/step)</li> </ul>		<b>Imaging Head - All Models</b>		
			<b>Objectives:</b> <ul style="list-style-type: none"> <li>Max. 5 objectives are mountable on S/W controlled motorized turret (1X – 100X)</li> <li>Compatible for commercial objectives</li> </ul>		

Model	IVM-C3	IVM-M3	IVM-CM3	IVM-MS3	IVM-CMS3
<b>Image - All Models</b>	<b>FOV:</b> <ul style="list-style-type: none"> <li>100 x 100 µm<sup>2</sup> – 10 x 10 mm<sup>2</sup></li> </ul>		<b>In Vivo Animal Stage - All Models</b>		
	<b>Pixel Resolution:</b> <ul style="list-style-type: none"> <li>Max. 2,048 x 2,048 pixels</li> </ul>		<b>3D Stage:</b> <ul style="list-style-type: none"> <li>Travel Range: 50,000 x 50,000 x 75,000 µm (XYZ)</li> <li>Micromanipulation (Max. 0.2 µm resolution)</li> <li>3-Axis independent control with Jog Dial &amp; S/W</li> </ul>		
	<b>Imaging Speed:</b> <ul style="list-style-type: none"> <li>Standard: 30 fps @ 512 x 512 pixels</li> <li>(Optional) High Speed: 50 fps @ 512 x 512 pixels</li> <li>(Optional) Ultra High Speed: 100 fps @ 512 x 512 pixels</li> </ul>				



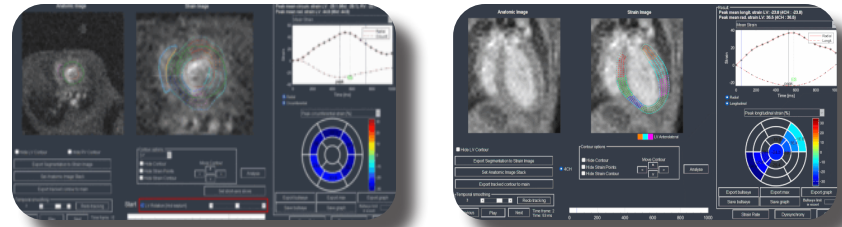
# IMAGE ANALYSIS SOFTWARE

## SEGMENT



**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 software 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.

Cardiac Function Analysis Software



## VIVOQUANT



**VivoQuant** is a vendor-neutral visualization, processing, co-registration, and quantification software suite developed by scientists for their peers. This versatile platform supports multi-modal and multi-species imaging, providing powerful tools for fine-tuning images, isolating and analyzing regions of interest, and more. With support for multiple image formats, including DICOM and 30+ native data formats, VivoQuant streamlines image analysis research studies across various imaging modalities, making it ideal for basic and translational research, including drug discovery.

**Fully DICOM compatible; along with 30+ other vendor specific formats:**

Users may import image data from any number of preclinical imaging systems, support for both static and dynamic data sets.

**Multi-modality support:**

VivoQuant supports and overlays data from most imaging modalities including MRI, PET, SPECT, CT, and optical imaging.

**Integrated image analysis tools:**

Improve analyses using the multi-atlas segmentation (MAS) tool, K-Means Segmentation Algorithm, and Cortical Thickness Tool.

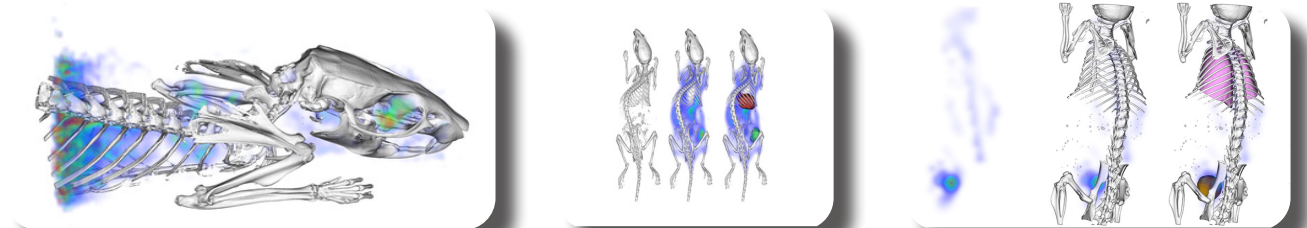
**Three-dimensional rendering function:**

Apply balancing, shading, orientation, color, and lighting parameters to enhance 3D image renderings for presentations and publications. (3D ROI).

- 3D Brain Atlas Tool
- Multi-Atlas
- Segmentation Tool
- Pharmacokinetic Modeling Tool
- Integration with iPACS

# IMAGE ANALYSIS SOFTWARE

## IMALYTICS PRECLINICAL



**Imalytics Preclinical** is a user-friendly software for fast interactive biomedical image data analysis, supporting 3D, 4D, and 5D data from various modalities. Advantages include optimized GPU processing for real-time 3D segmentations, an easy-to-learn interface with tutorials, and worldwide cloud-based accessibility for collaboration and remote work. It has been used to analyze (multi-modal) data sets from CT, PET, SPECT, MRI, US, FLT, and BLT.

### Features

<b>Pharmacokinetic modelling:</b>	<ul style="list-style-type: none"> <li>• Region-based fitting</li> <li>• Voxel-based fitting (parametric maps)</li> <li>• Patlak model</li> <li>• AIF generation, saving &amp; loading</li> <li>• One-Tissue compartment models</li> <li>• Two-Tissue compartment models</li> </ul>
<b>Relaxometry:</b>	<ul style="list-style-type: none"> <li>• Region-based fitting</li> <li>• Voxel-based fitting (parametric maps)</li> <li>• T1-model</li> <li>• T2-model</li> </ul>
<b>3D Printing:</b>	<ul style="list-style-type: none"> <li>• STL-export of image iso surface</li> <li>• STL-export of classes</li> <li>• Support generation</li> </ul>
<b>Bone analysis:</b>	<ul style="list-style-type: none"> <li>• Trabecular thickness &amp; separation</li> <li>• Bone statistics (Bone volume, bone volume fraction, bone surface, ...)</li> <li>• BMD calibration and measurement</li> <li>• Local thickness and separation map</li> </ul>
<b>Vascular analysis:</b>	<ul style="list-style-type: none"> <li>• Vessel tortuosity</li> <li>• Vessel diameter measurements along vessel</li> <li>• Vessel diameter feature maps (distance maps)</li> <li>• Vesselness feature map generation</li> </ul>
<b>Samples:</b>	<ul style="list-style-type: none"> <li>• Phantoms</li> <li>• Cells</li> <li>• Tissues</li> <li>• Organs</li> <li>• Bones</li> <li>• Tumors</li> <li>• Whole-body scans for insects, fish, birds, mice, rats, sheep, and other mammals</li> </ul>



- Signal Quantification
- High-throughput imaging 4 mice (or more)
- Kinetic Modeling
- Cardiac Imaging
- Integration with iPACS



# RESEARCH/THERAPEUTIC ULTRASOUND

## PRODIGY



The **Prodigy** is a compact, high-performance ultrasound system optimized for a variety of ultrasound engineering research applications. The Prodigy is available with either 128 or 256 transmit/receive channels, both with support for multiplexing (contact us for details). In addition, standard (up to 170 Vpp, 0.2 W/ch) and high-power (up to 140 Vpp, 1 W/ch) configurations are available.

### High Power Transmit Modules



**ARF01-200**  
Single channel  
1-50 MHz transmit  
Up to 200 mJ PW mode



**ARF02-180**  
Single channel  
Up to 15 MHz transmit  
Up to 162 W CW mode

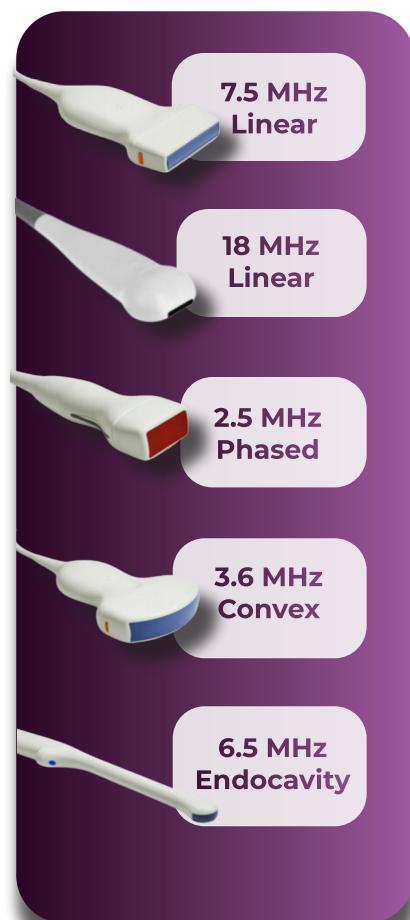


**HIFU256**  
256 transmit channels  
Up to 30 MHz transmit  
Up to 11.5 W CW mode

### Features & Specifications

<b>Transmitter:</b>	<ul style="list-style-type: none"> <li>Frequencies: 1 KHz to 30 MHz *Frequencies under 1 KHz can be discussed upon request</li> <li>True arbitrary transmit waveform with 4096 steps</li> <li>Time delay accuracy: up to 2.8 ns</li> </ul>
<b>Receiver:</b>	<ul style="list-style-type: none"> <li>Programmable gain range: -3~38 dB</li> <li>ADC sample: 16 bit, up to 125 MSPS</li> </ul>
<b>Embedded PC System:</b>	<ul style="list-style-type: none"> <li>High-performance CPU</li> <li>RAM: 32 GB or higher</li> <li>GPU: nVidia RTX 2060 or faster</li> <li>PCIe Gen3, up to 10 Gbytes/sec</li> </ul>
<b>Probe Connectors:</b>	<ul style="list-style-type: none"> <li>One 256-ch ITT Cannon DLM6-360R</li> <li>Two 128-ch ITT Cannon DLM1-156R</li> <li>128-ch configuration uses half of the DLM6 and the second DLM1. *Adapter boards are available upon request</li> </ul>
<b>External Interfaces:</b>	<ul style="list-style-type: none"> <li>Trigger in/out, clock output</li> </ul>
<b>Basic Imaging Modes:</b>	<ul style="list-style-type: none"> <li>B-Mode, M-Mode, Color Doppler, PW Doppler, Multi-Focus, Multi-Beam, Duplex and Triplex</li> </ul>
<b>System Dimensions:</b>	<ul style="list-style-type: none"> <li>342 x 382 x 398 mm</li> <li>Up to 39 kg</li> </ul>

### Probes



### Applications

- Advanced Imaging Modes**
- Pulse Sequence Mode
  - Trapezoidal or Steerable Scanning
  - Spatial Compounding
  - Harmonic Imaging

#### Shear Wave Elastography

Shear wave imaging, including supersonic shear imaging and ultrafast plane wave imaging, can be implemented with programmable push beams and imaging sequences.

#### High Intensity Focused Ultrasound

High-intensity focused ultrasound (HIFU) can be performed using the Prodigy system when combined with any of the high-power transmit modules.

#### Pulse Sequence Programming

Ultrasound pulse sequence programming provides flexibility in designing a variety of imaging modes where the parameters can be fully programmed. This feature is available with both an intuitive graphical user interface as well as through MATLAB, C#, and Python.

#### Real-time Channel Data Acquisition

RF data can be acquired in all imaging modes. When using the pulse sequence mode, raw data can also be accessed using the built-in viewer or analyzed in MATLAB, C#, or Python in real-time.

#### Compounding

Prodigy allows spatial compounding up to nine prespecified steering angles.

#### Complex Adaptive Imaging

Complex adaptive beamforming algorithms (e.g., MVDR based and/or coherence based) can be implemented in real time on Prodigy using the embedded GPU. Both pre/post-beamforming algorithms can be implemented.

#### Harmonic Imaging

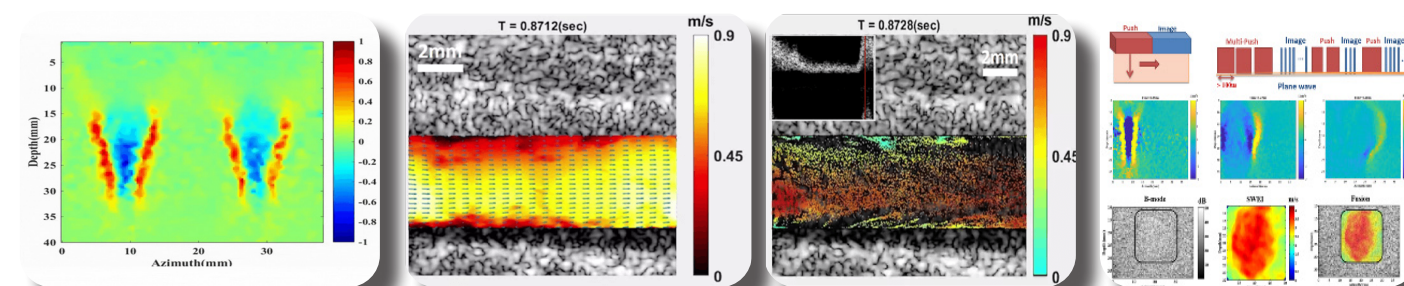
Harmonic imaging improves the image quality in terms of spatial and contrast resolutions. Both filter based and pulse-inversion (PI) based harmonic imaging can be implemented.

#### Coded Excitation

Coded excitation improves SNR and depth penetration. Codes can be arbitrarily designed using the arbitrary transmit waveform generator. The resulting sequence can also be arranged with different codes, enabling a variety of applications using coded excitation.

#### Synthetic Aperture/ Total Focusing Method

Prodigy allows a variety of synthetic techniques, such as synthetic transmit and receive aperture, sparse synthetic aperture, and random synthetic receive aperture, to be performed.



Shear Wave Elastography

Conventional Arrow VFI

Particle Trajectory VFI

Shear Wave Elastography

# BIOPRINTER

## NGB-R



The **NGB-R** is a multi-modal, 4D bioprinting platform designed and developed to print live tissues and organs. 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 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 Next Generation Bioprinting NGB-R platform from Poietis has been developed to overcome current tissue manufacturing shortfalls and solve critical limitations of existing 3D bioprinting technologies, thanks to single-cell resolution and learning-based methods. This platform integrates automation and robotics, and numerous online sensors – including cell microscopy – and Artificial Intelligence processing.



Multi-modality



Robotic Assisted



Integrated Microscope

### Applications

#### Regenerative Medicine Advanced Therapies

Regenerative medicine is a rapidly growing field that involves replacing or regenerating damaged or diseased cells, tissues or organs to restore normal function.

#### Drug Discovery & Therapeutic Testing

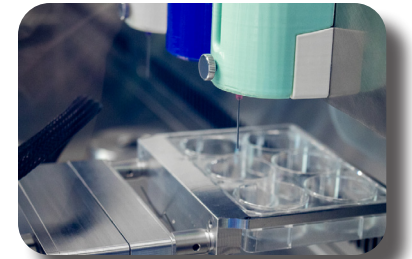
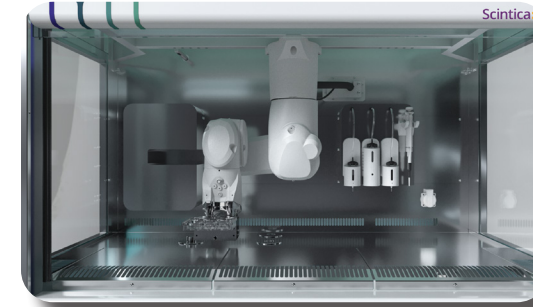
3D Bioprinted human tissues can bridge the gap in testing of therapeutics from preclinical animal models to in-human trials. In addition, the use of bioprinted tissue models allow for high-throughput screening of drugs.

#### Disease Modelling

3D Bioprinting can be used to fabricate *in vitro* 3D disease models, mimicking the structural and spatial features of the disease environment. This can be used to study the disease mechanism and test therapeutics.

#### Aesthetic Medicine & Cosmetic Testing

3D Bioprinted tissues can replace animal models for testing of cosmetic products. 3D bioprinted tissue fabricated out of human cells are more ethical for validation of aesthetic products.



### Features & Specifications

#### Multi-Modality, Laser-Assisted, Bio-extrusion, and Micro-valve Bioprinting Techniques:

The NGB-R incorporates 3 different bioprinting techniques all in one system:

- Laser-assisted-bioprinting (LAB)
- Bio-extrusion
- Micro-valve module

#### High Cellular Viability: (>95%)

NGB-R's laser-assisted bioprinting technology is nozzle-free technique with no damage causing forces occurring in the process. As a result, cell viability reaches >95% and printed tissues become truly functional.

#### High-resolution, High-printing Speed:

NGB-R is the first commercially available system to boast laser-assisted bioprinting, allowing users to deposit micro droplets (ranging in size from 50  $\mu\text{m}$  to 300  $\mu\text{m}$ ) of cell bioink with a precision of a few microns.

#### High-precision (10 $\mu\text{m}$ ):

The initial positioning of cells has a huge impact on the evolution of future tissues. While ordinary extrusion-based bioprinting techniques do not allow for precise positioning of printed cells within the hydrogel, NGB-R allows precise positioning of cells at pre-designed pattern.

#### Integrated Microscopy & Image Analysis platform:

The NGB-R can come with an optional built-in microscope to acquire images of each individual tissue layer at each step of fabrication.

#### Microfluidic Multi-cell Loading Module:

This feature is designed to enable fabrication of larger and more complex tissues in compliance with the Good Manufacturing Practices (GMP). This optional module includes a microfluidic cartridge and an automatized pipette or homogenization.

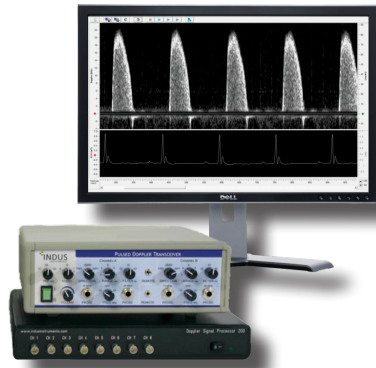
#### Robotic-assisted:

NGB-R is designed to address automation and reproducibility issues in tissue manufacturing; 6-axis robotic arm integrated within NGB-R allows semi- to fully automated fabrication.



# DOPPLER FLOW VELOCITY

## DFVS

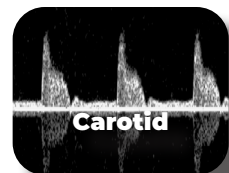


The **Doppler Flow Velocity System (DFVS)** is a high-frequency, real-time pulsed Doppler device with integrated data analysis software for studying cardiovascular function in small animals. It offers excellent temporal resolution, making it ideal for studying fast heart rates and rapid blood accelerations.

This system has been successfully used with mice, rats, bats, naked mole rats, and other small animals, and can also measure blood flow velocities in larger animals using implanted extra-vascular Doppler cuff probes.

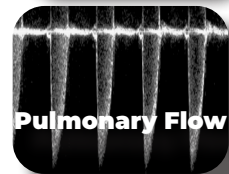


### Applications



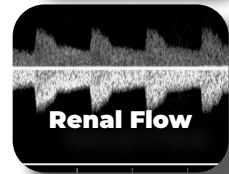
Carotid

**Cardiac Function: Systolic and Diastolic**  
**Area:** Myocardial Infarction, Heart Failure, Hypertrophy, Cardiomyopathy  
**Flow Parameter:** Aortic Outflow Velocity, Mitral Inflow Velocity



Pulmonary Flow

**Coronary Flow Reserve**  
**Area:** Myocardial Ischemia, Pressure Overload-Hypertrophy, Atherosclerosis  
**Flow Parameter:** Hyperemic/Baseline Coronary, Flow Velocity Ratio



Renal Flow

**Arterial Stiffness (Pulse Wave Velocity)**  
**Area:** Hypertension, Atherosclerosis  
**Flow Parameter:** Aortic Arch Velocity, Abdominal Aortic Velocity

**Pressure-Overload (Stenosis)**  
**Area:** TAC Banding Model  
**Flow Parameter:** Carotid (R/L) peak velocity ratio, Stenotic jet velocity-estimation of pressure gradient across stenosis

**Peripheral Artery Disease and Perfusion**  
**Area:** Renal, Carotid, Iliac, Femoral and Saphenous Vein Flow Velocities  
**Flow Parameter:** Flow Velocities in peripheral vessels before & after a surgical intervention or during therapeutic response

### Parameters

#### Surgical Monitoring & Vital Sign Measurements:

- Heart Rate
- R-R Interval

#### Peripheral Artery: Carotid, Renal, Femoral & Tail:

- Peak Velocity
- Mean & Minimum flow velocity
- Pulsatility Index
- Resistivity Index

#### Other: Coronary, Transverse & Abdominal Aorta:

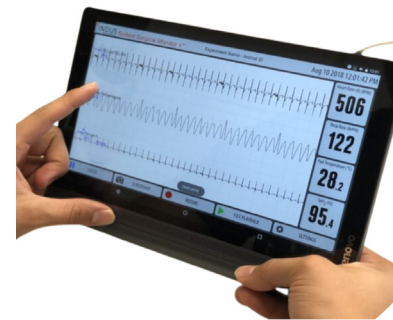
- Peak Diastolic Velocity (Coronary)
- Peak Systolic Velocity (Coronary)
- Diastolic & Systolic Area (Coronary)
- Ratios PSV/PDV & SA/DA
- Pulse Wave Velocity

#### Diastolic: Mitral Inflow Velocity:

- E-peak & E-stroke velocity
- E-time duration
- E-acceleration & E-deceleration time
- E-peak to 1/2 E-peak time
- E-linear deceleration time & rate
- A-stroke distance
- A-time duration
- E-A peak velocity ratio
- Isovolumic contraction time
- Isovolumic relaxation time

# RODENT SURGICAL MONITOR

## RSM+



The **Rodent Surgical Monitor (RSM+)** 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 setup consists of three components:

- Touchscreen Display Unit
- Heated Surgical Platform
- Temperature Probes

#### Optional components:

- Pulse Oximetry Thigh Clip
- Pressure Adapter Cable and Pressure Catheter
- External Needle Electrodes

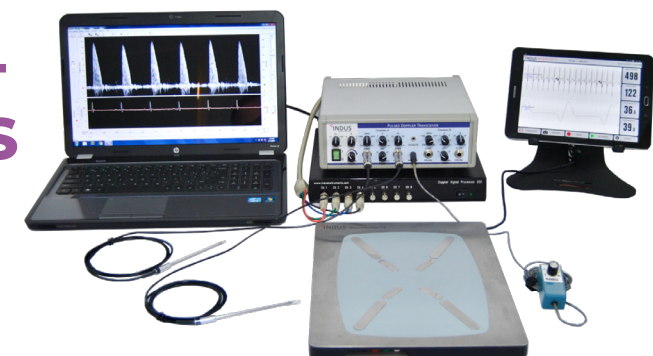
### Measure Simultaneously



### Features & Specifications

<b>Real-Time Monitoring:</b>	• Clearly labelled numeric panels and measurement waveforms make it easy to monitor critical parameters.
<b>Easy Documentation:</b>	• Define optimal study conditions and ensure consistency between subjects and collaborating labs.
<b>Versatile:</b>	• Three sets of electrodes make it easy to work with small mice, large rats and many small animals in between.
<b>Standalone Data Collection:</b>	• Capture data, make comments and view recordings on the tablet to quickly take measurements and verify experiment details.
<b>Flexible:</b>	• Expansion modules allow you to easily add functionality later as your lab and study's needs change.
<b>Dynamic:</b>	• Responsive electronic heating can respond to changing lab conditions within seconds, not minutes.

## PAIR THE RSM+ WITH THE DFVS



# HYPOXIA & ATMOSPHERIC CONTROL

## Anaerobic Chambers

### BugBox Ax



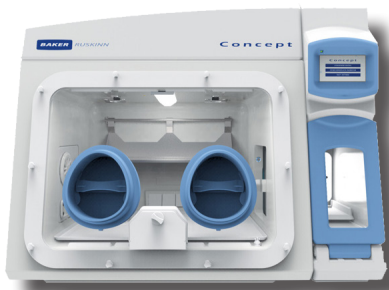
270 Plate Capacity

The **BugBox Ax** is the ultimate solution for microbiologists facing high workloads. With a gloveless Ezee Sleeve™ port system and energy-efficient lighting, easily read plates without oxygen exposure.

Its compact size fits small labs perfectly, while adjustable temperature and humidity create an ideal cell growth environment. Add active O<sub>2</sub> monitoring for precise control of anaerobic conditions

- 0.5 m<sup>2</sup> / 5.77 ft<sup>2</sup> bench footprint
- 30 plate capacity interlock
- Intuitive touchscreen interface
- Lower cost per plate compared to jars

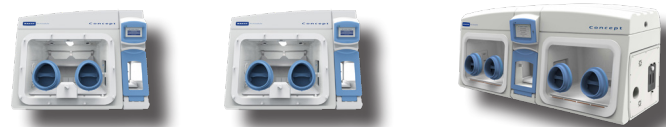
### Concept



The range of **Concept** workstations are rigorously tested for maximum productivity in anaerobic or microaerophilic incubation. Packed with innovative features to study sensitive microbes, it's perfect for culturing obligate anaerobes in various situations.

The modular design offers flexibility to expand and upgrade workspaces, making it easy to use and adaptable. Save time with fast interlock purge cycles and the Single Plate Entry System (SPES™) for efficient patient sample handling in correct anaerobic conditions.

- Internal HEPA Filtration
- Optical O<sub>2</sub> Sensors
- Pop-Off™ Front Cover
- Touchscreen Control
- Ezee Sleeve™
- Single Plate Entry System (SPES™)



Models	C400	C500	C1000
<b>Working Volume:</b>	210.3 L	210.3 L	Two independently controllable chambers 210.3 L each
<b>Interlock Capacity:</b>	26 L interlock holds	41 L interlock capacity	49 L Central interlock capacity
<b>Internal Sockets:</b>	3 Internal Sockets		6 Internal Sockets

# HYPOXIA & ATMOSPHERIC CONTROL

## Cell Culture Chambers

### InvivoO<sub>2</sub>



The **InvivoO<sub>2</sub>** workstation enables intricate cell interaction studies under optimal oxygen conditions, simulating environments like blood vessels or lung tissue. User-friendly and adjustable, it's ideal for cell culture applications that need precise oxygen control, offering stable user-defined environmental regulation and direct inner chamber access.

- |  |   |   |
|--|---|---|
| <ul style="list-style-type: none"> <li>Apnea/Apnoea</li> <li>Pulmonary Fibrosis</li> <li>ADHD</li> <li>Sleep Apnea</li> <li>Ocular Angiogenesis</li> </ul> | <ul style="list-style-type: none"> <li>Apnea of Prematurity</li> <li>SIDS (Sudden Infant Death Syndrome)</li> <li>Ischemia</li> <li>Occupational Hypoxia</li> </ul> | <ul style="list-style-type: none"> <li>Atherosclerosis</li> <li>Developmental Disabilities</li> <li>COPD</li> <li>Recreational Hyperoxia</li> </ul> |
|--|---|---|



**1400**

- Mimic Physiology: O<sub>2</sub> Control – from 0.1% to 23.0%
- Pop Off™ Front
- Control CO<sub>2</sub>, Temperature and Humidity
- Internal HEPA Filtration
- Intelligent Interlock – 26 L Capacity



**1500**

- Mimic Physiology: O<sub>2</sub> Control – from 0.1% to 23.0%
- Pop Off™ front
- Control CO<sub>2</sub>, Temperature and Humidity
- Internal HEPA Filtration
- Intelligent Interlock – 41 L Capacity



**11000**

- Mimic Physiology: O<sub>2</sub> Control – from 0.1% to 23.0%
- Pop Off™ front
- Control CO<sub>2</sub>, Temperature and Humidity
- Internal HEPA Filtration
- Intelligent Interlock – 49 L Capacity
- Two Independent Controllable Chambers

### SCI-tive



The **SCI-tive** hypoxia workstations enhance stem cell culture quality by maintaining consistent oxygen, temperature, and pH conditions. They mimic *in vivo* conditions and allow for the study of complex cell interactions. These workstations offer a spacious environment for all stages of cell culture, and can accommodate various equipment, replacing open bench work. Optional features include a HEPA filtration for a clean work area and an enhanced containment package for user safety.

- |  |  |   |
|--|--|---|
| <ul style="list-style-type: none"> <li>Internal HEPA filtration to Class 4 (ISO 14644-1)</li> <li>The system logs data every minute, recording time, date, O<sub>2</sub> and CO<sub>2</sub> levels (set/actual), humidity, and temperature</li> <li>Ezeeyin Glove ports for direct hand access</li> <li>Multi-cable gland (up to 6 individual cables)</li> </ul> | <ul style="list-style-type: none"> <li>Removable from 420 L usable chamber volume</li> <li>CO<sub>2</sub> control (from 0.1% to 30.0% in 0.1% increments)</li> <li>Ultrasonic Humidity control (from ambient to 85% RH)</li> <li>Detox sachet (large)</li> <li>Temperature control (5 °C above ambient to 45.0° C in 0.1° C increments)</li> </ul> | <ul style="list-style-type: none"> <li>Interlock has O<sub>2</sub> control and heating</li> <li>Internal power sockets x3</li> <li>O<sub>2</sub> control (from 0.1% to 23.0% in 0.1% increments)</li> <li>Gas sample port</li> <li>Vacuum port connector</li> <li>Alarm settings</li> <li>Light control (on/off, dimming function)</li> </ul> |
|--|--|---|



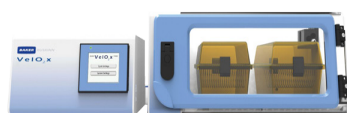
## HYPOXIA & ATMOSPHERIC CONTROL

### OxyGenie



**OxyGenie** is a miniaturized, portable low-oxygen culture system for animal, plant, and bacterial studies. It enables short-term physiological oxygen- and temperature-based studies, particularly useful for high-resolution microscopy or irradiation under relevant conditions. The system features 6 culture wells enclosed for physiological growth, situated on microscope glass for flexible experimental adaptation. It's an accessible tool for start-up validation or proof-of-concept physiological cell culture experiments.

### VeLO<sub>2</sub>x



The **VeLO<sub>2</sub>x** system has been engineered to provide an isolated and highly controlled oxygen environment to small animal models (i.e. mouse and/or rat). By directly mimicking the oxygen conditions experienced across a wide variety of disease or treatment models, the VeLO<sub>2</sub>x grants researchers a better understanding of how O<sub>2</sub> levels affect various conditions such as sleep apnea, systemic hypertension, pulmonary dysfunction, and ischemia to name a few.

- Full control of oxygen levels
- Easy to use
- Rapid changes in O<sub>2</sub> levels
- Animal Welfare

### ReCO<sub>2</sub>ver™



The **ReCO<sub>2</sub>ver™** and **ReCO<sub>2</sub>ver™ Plus** incubators are designed to offer precision control over cell culture conditions and provide rapid recovery after interruptions. They aim to minimize the impact of door openings that disrupt the environmental parameters essential for cell growth, thus ensuring the integrity of your work. 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.

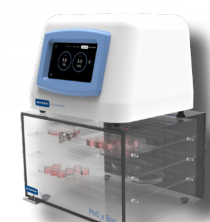
### CondoCell



The **CondoCell** is an isolation box for sensitive cell cultures, providing a stable environment with consistent temperature, humidity and gas conditions. Compatible with any incubator or hypoxia workstation, it enables uninterrupted culture and minimizes cross-contamination risks.

## HYPOXIA & ATMOSPHERIC CONTROL

### PhO<sub>2</sub>x Box



The **PhO<sub>2</sub>x Box** is a new, easy to use and economical Physoxia/Hypoxia system designed for in vitro cell culture experiments. PhO<sub>2</sub>x Box comprises a Gas Controller (with both O<sub>2</sub> and CO<sub>2</sub> 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.**

### MycoFog™



**MycoFog** Biodecontamination Fogger is a battery-powered piezo-driven nebulizing instrument that creates the hydrogen peroxide fog that biodecontaminates your incubator.

MycoFog is a valuable tool for laboratories that need to maintain a clean and contaminant-free environment. The instrument is particularly useful for laboratories that work with tissue- and cell-culture controlled environment equipment including incubators, glove boxes, and anaerobic or hypoxic chambers.



#### MycoFog Biodecontamination Reagent (MFR-1):

MFR-1 is for use with incubators 200L and less

#### MycoFog Biodecontamination Reagent (MFR-2):

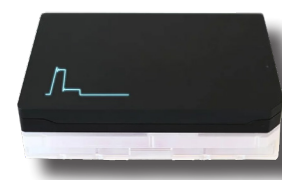
MFR-2 is for incubators and workstations over 200L but less than 500L



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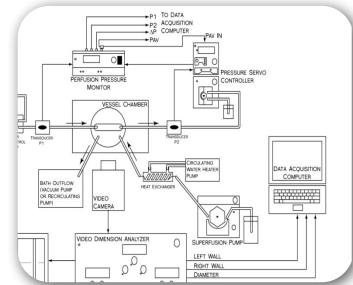
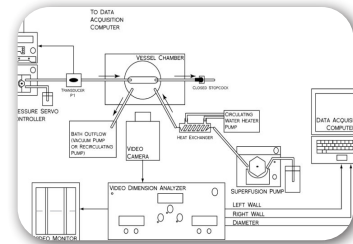
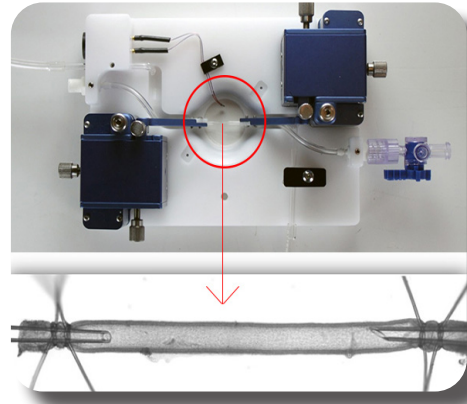
### Resipher



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.

## MICROVASCULAR RESEARCH

**Pressure Arteriography** **Pressure Arteriography** is the gold-standard for studying blood vessel function, reactivity, and mechanics. Living Systems Instrumentation is a leading provider of complete systems, ensuring quick setup and reliable results. Most applications use constant pressure, no intraluminal flow setup with an occluded distal end. For intra-vascular flow, a pump and pressure monitoring are needed.



### Vessel Chambers

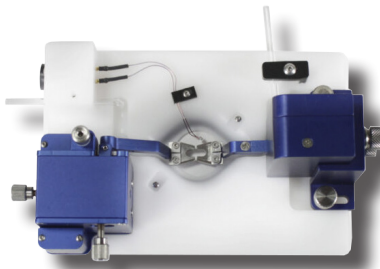
- **Single** Vessel Chamber
- **Dual** Vessel Chamber
- **Linear Alignment** Vessel Chamber
- **Self Heated Single** Vessel Chamber
- **Self Heated Dual** Vessel Chamber
- **Linear Alignment** Vessel Chamber

### Special Vessel Chambers

- **Linear Alignment Large** Vessel Chamber
- **Axially Rotating Single** Vessel Chamber
- **Quick Transfer Single** Vessel Chamber
- **Perfusion Chamber with Metal Block** for Magnetic Accessories
- **Sealed Single** Vessel Chamber
- **Sealed Vessel Self Heated** Chamber

## Wire Myography

**Wire Myography** is an *in vitro* technique to study small resistance arteries' functional responses and vascular reactivity. Living Systems Instrumentation offers the classic Halpern/Mulvany style wire myograph, faithful to the original design but with modern advancements. Their myographs support various tissue types, making them suitable for different applications, including force measurements in micro vessels, large arteries, airways, and more. Explore Living Systems' wire myograph options for comprehensive vascular research.



The **MYO-SC-1 Force Transducer Signal Conditioner** converts force measurements from the MYO-CH wire myograph chamber's force transducer into an analog voltage for recording with an analog-to-digital converter or chart recording device

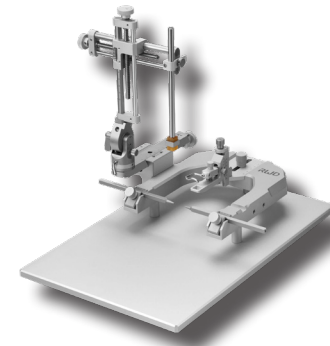
### Myograph Packages

- **Single** Channel
- **Single Channel Self-Heated**
- **Two Channel Self-Heated**
- **Four Channel Self-Heated**

## STEREOTAXIC, NEUROSCIENCE & OTHER PRODUCTS

### Stereotaxic

Scintica offers a wide range of fully equipped stereotaxic instruments for various animal models. Choose from Standard, Digital, or Automatic options based on your precision needs. Upgrade from manual to digital and opt for single or dual manipulators. Elevate your research with our precise and efficient instruments.



#### Models

- **Standard** Stereotaxic Instrument
- **Desktop** Digital Stereotaxic Instruments
- **Portable Rat & Mouse** Stereotaxic Instruments
- **Large Animal** Stereotaxic Instruments
- **Warming** Stereotaxic Instruments
- **Compact Mouse** Stereotaxic Instruments
- **Dog/Monkey** MRI Stereotaxic Instruments

### Precise Impactor



**The Precise Impactors** for Rat, Mice, and Monkey Spinal Cord Injuries. The Precise Impactor is designed for traumatic brain and spinal cord injuries, offering pneumatic-electric control for precise w of speed, depth, and dwell time.

Its touch screen interface and automatic zero detection ensure user-friendly and efficient operation. With a range of impact parameters and cylindrical head hammers available, the damage level can be precisely controlled for reproducible results. These user-friendly tools offer pneumatic control and accurate measurements, ensuring reproducibility and effectiveness in experiments.

### Fiber Photometry System



The fiber photometry system detects real-time activity changes in central nervous system neurons. It calculates overall fluorescence of neurons to represent collective activity, not individual ones.

### Tricolor Multichannel Fiber Photometry System



Compatibility with optoelectronics equipment for specific light wavelengths (410 nm, 470 nm, 560 nm). The 410 nm wavelength is utilized to acquire a reference signal and reduce noise. The system can capture signals from green fluorescence indicators such as GCaMP, dLight, neurotransmitter probes, and red fluorescence indicators.



## OTHER RESEARCH PRODUCTS

### Intelligent Optogenetic System



The Intelligent Optogenetics System seamlessly integrates a laser and a waveform generator. Enhanced with features like remote control, one-click test transitions, and three distinct signal triggering modes, it caters to a wide range of experimental needs. This system minimizes human interference in animal behavior experiments. Additionally, its specialized test protocols and an intuitive experiment record output function streamline and enhance experiment management.

### Automated Cell Counter

Cell counters tally live and/or deceased cells within cultures. In cell culture workspaces, researchers require cell counting solutions to gauge cell concentration pre-passage or viability post-drug treatment. C100 serves as an ideal cell counting choice for labs, accommodating diverse samples such as mammalian cells, stem cells, blood cells, epithelial cells, and endothelial cells.



### Minux Rotary Microtome



The new generation of microtomes are built upon market-leading microtome design. These microtomes feature superior usability with excellent safety standards for all types of sectioning applications. If working with delicate specimens (example being brain samples) the system will provide reproducible, thin, serial sections of maximum quality time and again.

### Minux Cryostat

This cryostat features superior usability with excellent safety standards for all types of cryo-sectioning applications. The cryostat is able to cut tissues at temperatures as low as  $-35^{\circ}\text{C}$ . When working with delicate specimens the system will provide reproducible, thin, serial sections of the best quality. The tissue can be flattened, and the freezing is expedited with a steel weight/heat extractor to provide a smooth flat-cutting surface. Fully automated and semi-automated versions are available.



## OTHER RESEARCH PRODUCTS

### Microcentrifuge & Refrigerated Microcentrifuge



The **Microcentrifuge** is a powerful and versatile solution for every lab application, with state-of-the-art refrigeration (if needed) and a user-friendly touch screen operating system. Enjoy quiet operation and reduced run times with speeds up to 15,000 rpm, multiple mode options, and a 24-place 1.5/2.0 mL tube rotor.

### Partial Volume Correction (PVC) Phantoms

The micro PVC phantoms are available in 3 sizes (27 mm OD, 34 mm OD, and 49 mm OD). The 27 mm OD version is shown below for more detail. All units are in mm unless otherwise noted. These phantoms consist of one custom manufactured component and three separate pieces of commercial hardware for assembly.



### Bio-Mouse™ Phantom



The first fillable biomimetic mouse phantom with Computed Tomography (CT) Hounsfield Unit (HU) density-equivalent bone and soft tissue. This phantom can be customized to include/exclude the following organ/tissue voids: tumor(s), brain, heart, lung, liver, spleen, stomach, kidneys, bladder, and a background region.

### Micro Derenzo Pattern Phantoms

These phantoms are used to characterize an imaging system's resolution by measuring the FWHM of hole patterns with varying diameters and spacing. Holes within a size group are spaced at exactly 2D (twice the diameter) apart. These phantoms feature six different hole sizes arranged in triangles around the center of phantom. These phantoms also feature our patented Linear-Filling Technology.



## ANAESTHESIA PRODUCTS & SOLUTIONS

### Multi-function Anaesthesia Solution



Scintica offers complete anaesthesia systems and accessories for the smallest preclinical research subjects. These systems are designed to deliver highly effective anaesthesia with depth modulation.

### Vaporizers

Anaesthesia machine vaporizer adopts advanced design to accurately control the output concentration of anaesthesia. Pour Fill, Easy Fill, and Key Fill, Cagemount and Selectatec available. Stable concentration output unaffected by flow, temperature and pressure. The built-in temperature compensator ensures the stable concentration of anaesthesia gas at different temperatures and flow rates, the flow range is 0.2-10L/min.



### Oxygen Concentrator

The high purity oxygen is separated from the air by molecular sieve pressure swing adsorption (PSA) technology. ROC-5A/ROC-8A Veterinary Oxygen Concentrator is designed specifically for veterinary use. The high purity oxygen is separated from the air by molecular sieve pressure swing adsorption (PSA) technology.



### Large Animal Anaesthesia Solutions

Designed for simplicity, ease of use, and safety, our large animal veterinary anaesthesia systems cater to a variety of animal species including dogs, cats, pigs, monkeys, and more.

The complete solution includes oxygen generation, anaesthesia delivery, waste anaesthetic gas absorption, monitoring, and mechanical ventilation.



## LAB CONSUMABLES

### Dissection Dishes



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

### Dissection Pins



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

### Glass Cannula Packs



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

Order Your Lab Consumables

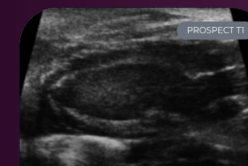


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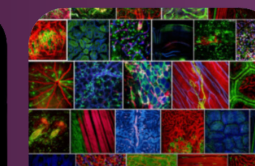
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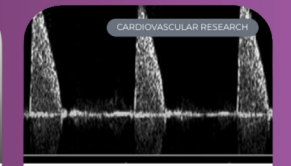
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