



**MRI** Simplified.  
Optimized.

Compact. Powerful. Affordable.  
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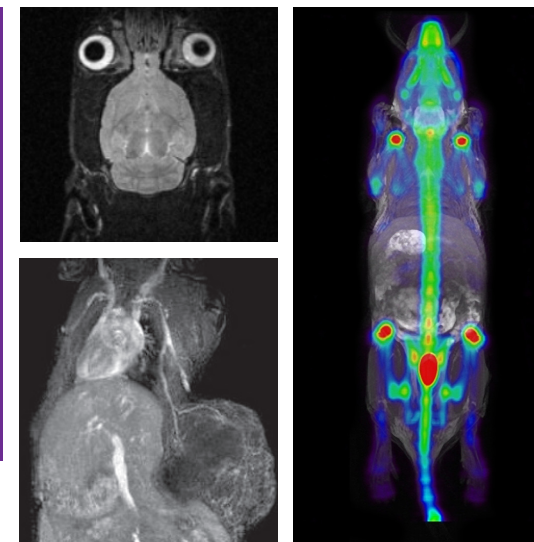
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M-Series™ is a registered trademark of Aspect Imaging, Ltd. Aspect Imaging is a global leader in the design and development of compact, high-quality MR imaging solutions, designed for use in preclinical research and medical applications.

# M-Series™ Compact MRI Systems

Compact. Powerful. Affordable.

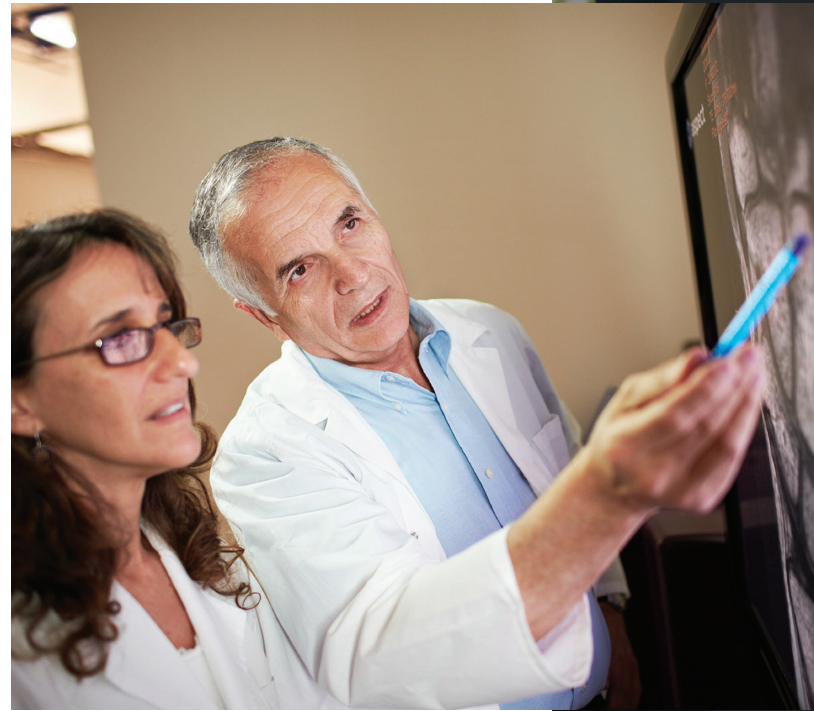




## MRI Simplified and Optimized for Preclinical Research

Aspect Imaging is the world's leader in compact, high performance MRI systems: Powerful results without the cost, complexity and technical burden of conventional MRI systems. With the M-Series™ platform, researchers can harness the power and insights of MRI, deriving quantified answers to their biological questions quickly, easily and cost effectively.

The M-Series Compact MR Imaging provides non invasive 3D anatomical, functional and molecular results in mice and rats, while eliminating the complexity and limitations associated with conventional MRI systems.



“The M-Series compact MRI system is simple to operate and the self-shielded design makes it easy for us to position the unit exactly where we need it for quicker, more effective scanning.” – Director, Imaging Lab



## Compact MRI Systems Sized to Meet Your Specific Needs

Aspect Imaging® MRI systems offer a comprehensive preclinical solution to quantify the expression of disease, monitor disease progression and assess therapeutic efficacy and response in lab rodents. The portfolio of products in the M-Series make the power of MRI available for all areas of research requiring rodent imaging from small mice to large rats.



- High performance, compact, permanent magnet on a portable cart
- PC workstation with simple and intuitive operating software
- Scalable with easy “magnet only” upgrade. Workstation, software and electronics are the same for all M-Series™ compact MRI systems
- Flexibility and customization available for more advanced MRI users
- A complete solution including animal handling, physiology monitoring and anesthesia delivery
- Best-in-class post processing, analysis and data management solution



### M3™

The M3™ generates high-resolution 2D and 3D anatomical, functional and molecular images with a bore size optimized for mice.

- Permanent Magnet: 1T magnetic field strength
- Magnetic Opening:
  - Flange Insertion Diameter: 70 mm
  - Inner Bore (Height x Width): 50 x 130 mm
- Imaging Volume: 80 x 80 x 35 mm<sup>3</sup> spheroid
- Height: 1080 mm | Width: 734 mm | Depth: 734 mm

### M5™

The M5™ enables non-invasive 2D and 3D anatomical, functional and molecular imaging of both mice and rat models.

- Permanent Magnet: 1T magnetic field strength
- Magnetic Opening:
  - Flange Insertion Diameter: No insertion flange
  - Inner Bore (Height x Width): 76 x 200 mm
- Imaging Volume: 90 x 90 x 60 mm<sup>3</sup> spheroid
- Height: 1300 mm | Width: 550 mm | Depth: 550 mm



### M7™

The M7™ provides optimum versatility, with 2D and 3D *ex vivo*, *in vivo* and *in vitro* imaging of mice and large rats.

- Permanent Magnet: 1T magnetic field strength
- Magnetic Opening:
  - Flange Insertion Diameter: 97 mm
  - Inner Bore (Height x Width): 220 x 90 mm
- Imaging Volume: 120 x 120 x 70 mm<sup>3</sup> spheroid
- Height: 1320 mm | Width: 790 mm | Depth: 950 mm

**Built to deliver powerful benefits**

#### Simple to operate

Intuitive software interface and analysis tools require no prior experience in MR imaging to fully execute the workflow and imaging.

#### No additional infrastructure necessary to maintain the magnetic field

Aspect Imaging's permanent magnet technology removes the need for cryogenics, plumbing and supplemental power supplies or coolers.

#### Pain-free installation, ready for imaging from day one

Simply wheeled into position and moved around based on the needs of the working lab, with imaging possible just a few hours after installation.

#### No running cost of upkeep

Negligible running cost with a maintenance free magnet, no moving parts or cooling. Standard warranty is **24 months** with options for extended warranty for up to 5 years. Power fluctuations and outages have no impact on the permanent magnet.

#### No special location requirements.

Requires no dedicated power supply, no shielded room or other magnetic field restrictions, and all within a small space.

## M-Series™ Imaging Software Platform

Acquisition software for preclinical MR imaging, integrating a coherent suite of sequences:

### Spin Echo with the following options:

- Respiration/Cardiac triggering
- Preceding inversion recovery pulse
- Diffusion weighted imaging

### Gradient Echo with the following options:

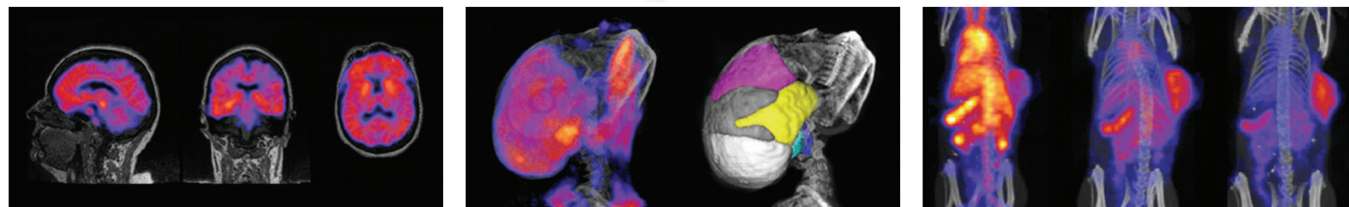
- 2D and 3D
- Respiration/cardiac triggering
- Dynamic acquisition – i.e. Dynamic Contrast Enhanced (DCE)
- IR Snap for T1 map generation

### Fast Spin Echo

- 2D and 3D
- Respiration/Cardiac triggering
- Variable echo train length
- Multi-point fat/water separation

## VivoQuant™ Image Post-Processing Suite

The M-Series compact MRI systems are compatible with Invicro's VivoQuant™, a post-processing software suite for SPECT, CT, PE, MR, Optical and Autoradiography imaging data, which is designed to support multi-modality, multi-species image processing applications. VivoQuant combines fundamental viewing functionality with powerful tools for fine-tuning images, isolating and analyzing regions of interest, and more. Multiple display modes including orthogonal views, slice views, special co-registration multi-views as well as 3D MIP and volume renderings allow users to optimally view information of interest. Built-in tools allow the imaging scientist to extract the information needed with minimal effort.



## SimPET Simultaneous PET/MRI Scanner

Enhance your research with the world's first complete and most cost-effective permanent magnet simultaneous PET/MRI solution for preclinical research. It features the most compact and reliable MRI-compatible SiPM PET (Silicon Photo Multiplier) insert for truly simultaneous PET/MRI studies in small animals.

Compact and reliable MRI-compatible PET insert for simultaneous PET/MRI studies in small animals

- Proven, future proof SiPM PET technology
- Excellent PET detector stability
- Sub-mm spatial resolution
- Flexible modes of operation



### PET Performance

Characteristics	Value
Scatter fraction for mouse	17%
Peak sensitivity	3.4%
Spatial resolution with 3D OSEM	<0.8 mm
Spatial resolution with FBP	<1.3 mm
Energy resolution	15%





## Optimized Animal Handling System

A full suite of application-specific RF coils and animal handling beds and accessories:

Type	Inner Diameter	Length	Application
Mouse head	23 mm	25 mm	Neurological imaging in mice
Mouse body	30 mm	50 mm	Extremity, abdominal and thoracic cavity imaging in mice
Mouse whole body	30 mm	80 mm	Whole body imaging in mice
Large mouse body	38 mm	50 mm	Multi-modal imaging in mice obesity studies in mice
Rat head	35 mm	40 mm	Neurological imaging in rats
Rat body	50/60 ellipsoid	90 mm	Extremity, abdominal and thoracic cavity imaging in rats
Large rat body	71 mm	90 mm	Extremity, abdominal and thoracic cavity imaging in large rats

### Multi-Nuclear Capabilities

- Optional imaging coils for advanced multi-nuclear imaging
- Supports imaging and detection of 13C

### Multi-Modality Capabilities

- Simultaneous PET/MRI with SimPET (MR compatible PET insert from Brightonix Imaging).

## Fully Integrated Animal Handling System

Facilitating a complete setup for preclinical imaging with designated coil for different imaging applications.

### Motorized calibration mechanism enabling automatic coil-tuning

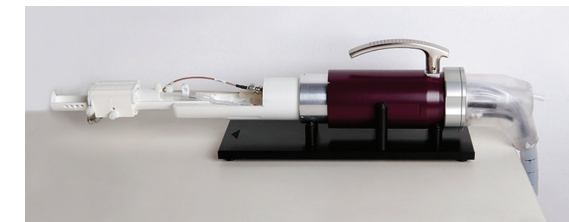
- Water heated animal bed maintaining hydrated body temperature
- Physiological monitoring system (respiration, ECG and temperature)
- Delivery and evacuation of isoflurane-based anesthesia

### Small animal physiological monitoring

- Respiration, ECG and temperature monitoring
- Respiration and ECG output triggering to MRI spectrometer
- Additional readouts monitor

### Isoflurane-based anesthesia

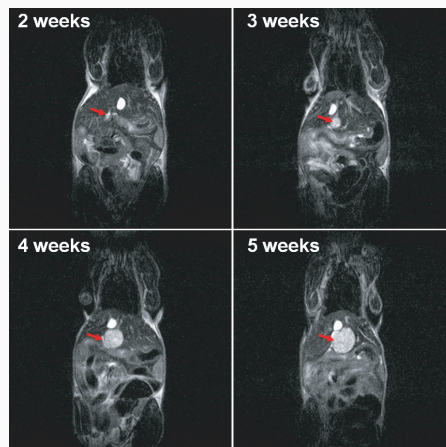
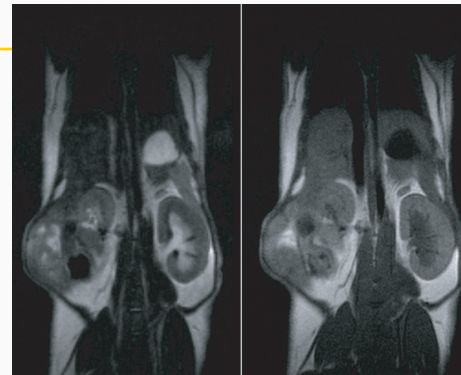
- Vaporizer with temperature and flow-rate compensation
- Scavenging cube for waste gas
- Breathing circuit with 3 access points



## Application Oriented Imaging

### Anatomy and Morphology

*In vivo* soft tissue imaging for morphological characterization. 2D and 3D imaging can be performed quickly and easily for preclinical model assessment.

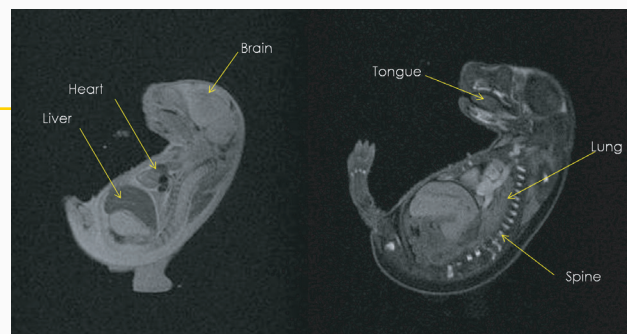


### Cancer Research

Detection, follow-up, and quantification of tumor development and progression.

### Histology Imaging

High-resolution, high throughput, 3D MR-based histology imaging of fixed samples and embryos for toxicological and developmental studies.

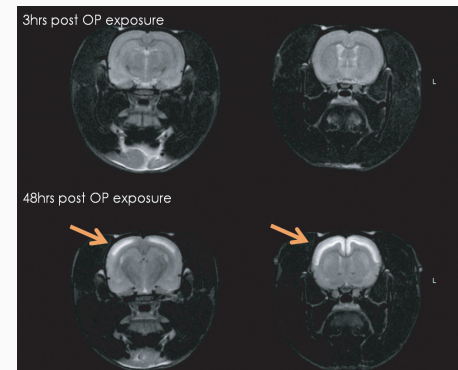


### Molecular Imaging Using Contrast Agents

Detection and quantification of cellular activity targeted and enhanced with contrast agents.

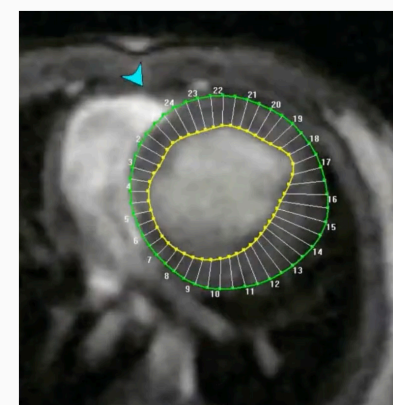
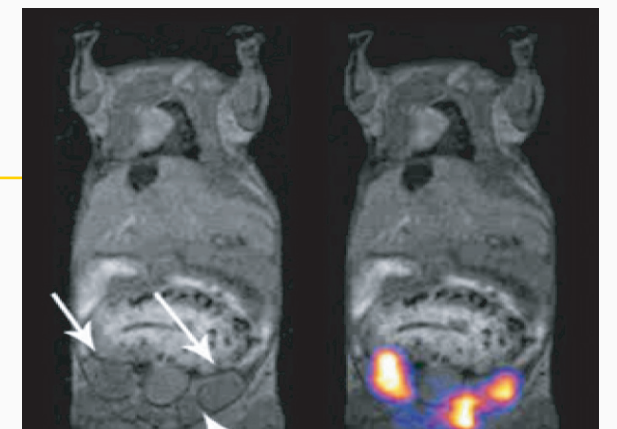
### Neurobiology

*In vivo* anatomical imaging of the brain, spine and spinal cord for assessment and follow-up of neurologically-based diseases.



### Multi-Modality Imaging

Easy registration with other modalities such as Optical, PET, SPECT and CT to enable powerful multi-modality phenotyping.



### Cardiovascular

Quality *in vivo* imaging enables the detection, monitoring and analysis of cardiovascular metabolism, disease progression, genetic alteration and pharmacological intervention.

Measure Name	LV	RV
ED Volume	0.0208 ml	NA
ES Volume	0.0088 ml	NA
Stroke Volume	0.0119 ml	NA
EF	57.51%	NA
ED Mass	0.0234 g	NA
ES Mass	0.0229 g	NA

