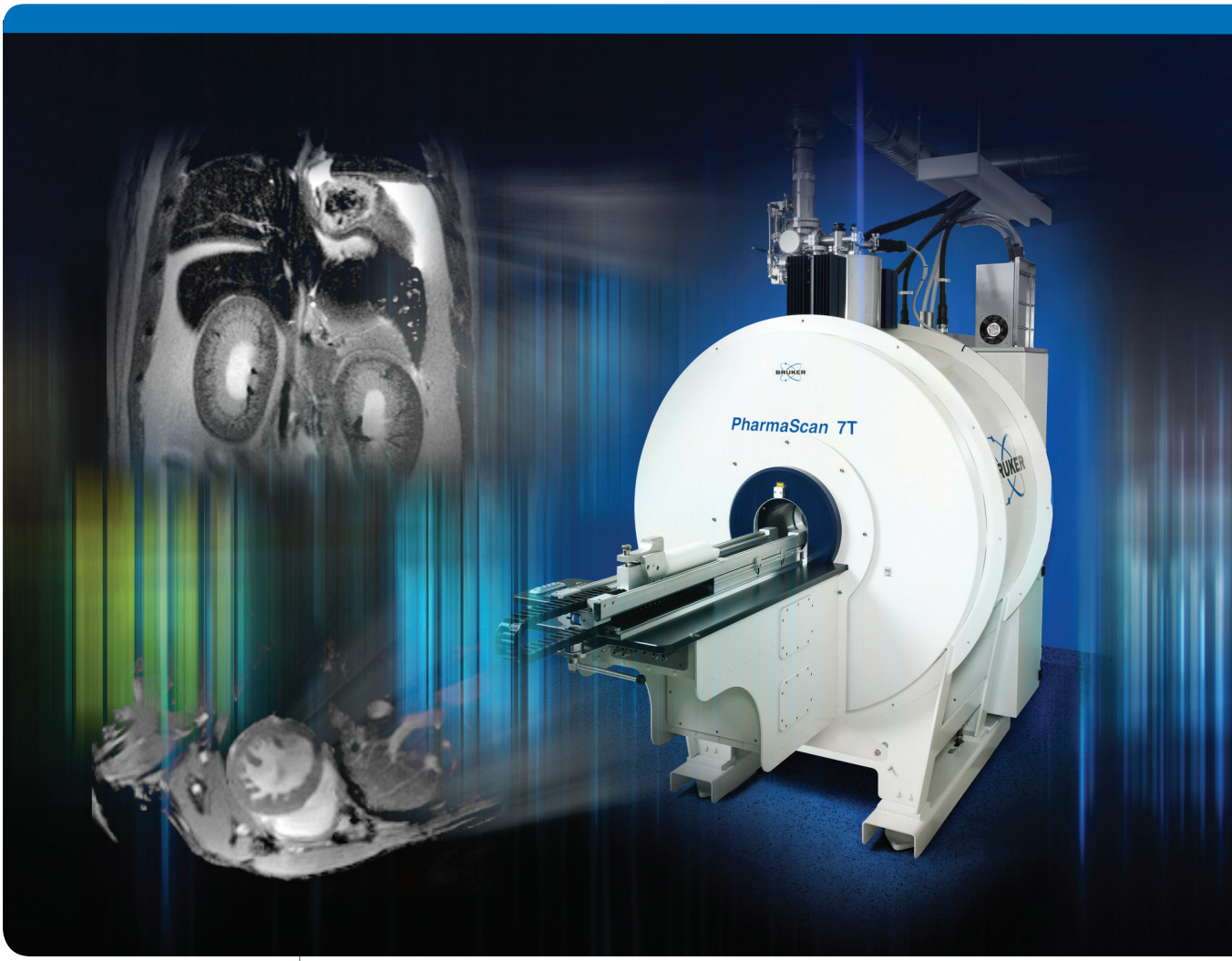


PharmaScan 7 T

- The Lowest Running Cost Preclinical MRI

MRI

Innovation with Integrity

A Secure Investment

Bruker's PharmaScan® MRI ultra-shielded technology provides greatest physical stability for perfect results, combined with the most calculable running costs for predictable long-term financial planning.

The 7 Tesla PharmaScan is a high field MRI that provides great flexibility for imaging of small animals, such as mice and rats. It makes addressing pharmaceutical, biological, and molecular questions easy, since it comes with preoptimized acquisition and analysis protocols for fast and consistent results. Its unique magnet design, which does not feature a cold head, provides maximal physical stability, which is imperative in motion-sensitive studies, such as fMRI.

Core facilities, contract research organizations (CROs), and similar institutes that use their MRIs for profit benefit from its extremely low total cost of ownership (TCO) resulting from its small footprint and ease of installation as well as its low acquisition costs. Likewise, businesses such as pharmaceutical companies appreciate its extremely consistent and therefore low running costs. Its compact size allows it to be easily placed in small laboratories or laboratories hosting other imaging systems such as PET or CT instruments and since no Faraday cage is required, siting costs are kept to a minimum.

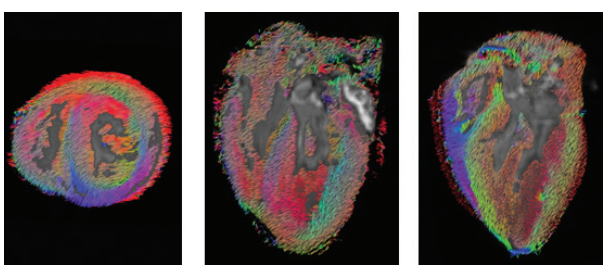
Angiography

3D Time-Of-Flight angiography, using a blood pool contrast agent, provides excellent contrast for visualizing even smallest vascular structures.

Key Benefits

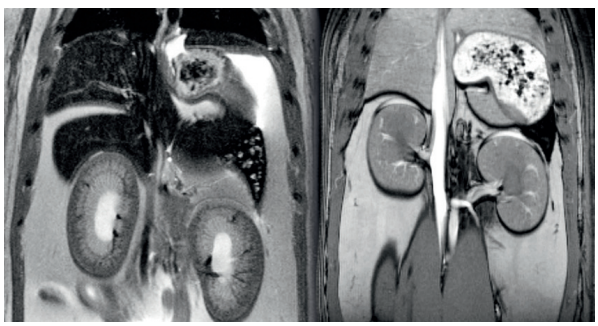
- Unique magnet technology requiring no cold head, for greatest physical stability and lowest running costs
- Compact instrument with no Faraday cage necessary for low site requirements and costs
- Most advanced preclinical MRI software, ParaVision, and state-of-the-art electronics guarantee full access to applications and accessories
- Over 100 validated and ready to use *in vivo* protocols and scan programs for mice and rats
- Significant signal-to-noise boost *in vivo* with the MRI CryoProbe™
- In-house development and production of all key components (software, magnet, gradient, spectrometer, RF-coils) ensures the best performance
- Comprehensive services, hotlines, in-house and onsite training courses optimize productivity

Diffusion Tensor Imaging



150 µm³ resolution tractogrpahy of *ex vivo* marmoset heart.

Abdominal Imaging



Both T2-weighted triggered RARE (left), as well as retrospective-gated IntraGateFLASH (right) provide excellent contrast in rat abdominal imaging.

State-of-the-art Technology

Magnet

The PharmaScan is based on Ultra Shielded magnet technology, guaranteeing minimum magnetic stray fields and physical vibrations. Its installation is very easy and its running costs extremely calculable. It has a 16 cm clear bore size with 72 mm free access for the animal.

Gradients and Shims

The PharmaScan incorporates an actively shielded high performance B-GA9S HP gradient with high amplitudes and slew rates, shim strengths and duty cycles. Gradient strengths of up to 760 mT/m and slew rates of 6840 T/m/s are available. Integrated shim coils with full second order and z3 high power shim channels deliver optimal field homogeneity for spectroscopic and imaging applications.

Electronics

The scalable AVANCE NEO MRI RF architecture encompasses up to 24 transmit and 16 receive channels and enables parallel imaging for almost all applications including EPI. It includes automatic hardware recognition and real-time spectrometer control for the optimization of acquisition parameters during scanning.

Software

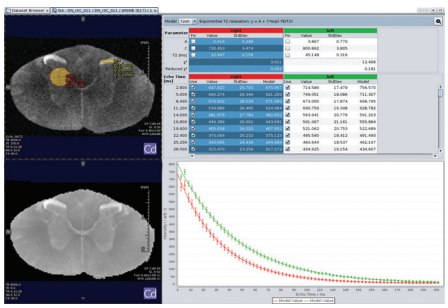
The intuitive ParaVision software contains an unparalleled preclinical MRI and MRS sequence portfolio with more than 30 methods, each combinable with up to 20 modules. Method highlights include wireless cardiac imaging using navigator based IntraGate combined with cartesian or radial readout, as well as short echo time imaging, such as UTE and ZTE.

Study efficiency and quality is enhanced with the use of over 100 validated and ready to use, application optimized, *in vivo* protocols and scan programs, and extensive visualization, reconstruction, analysis, and quantification functions.

RF Coils

In addition to surface, volume, and phased array coils that ensure maximum signal-to-noise and RF-homogeneity for mouse and rat head, brain, heart, and body applications, X-nuclei surface and volume coils, optogenetic coils, and the MRI CryoProbe are available. Phased-array coils minimize scan times and the unique MRI CryoProbe delivers an exceptional increase in sensitivity, resulting in even higher spatial or temporal resolution and shorter scan times.

Interactive Quantitative Mapping



Interactive ROI navigation with immediate update.

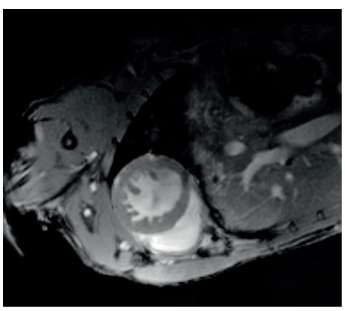
Neuroanatomy

T2-weighted RARE sequence using a SPIO contrast agent for exceptional contrast in rat brain.

RF Coils

MR CryoProbe, surface coils, and volume coils.

Bright Blood Cardiac Imaging



Endoventricular structures visible in triggered CINE FLASH (117 × 156) µm² short axis view of murine heart.

PharmaScan 7 T

Magnet Specifications	
Field strength	7 Tesla
Bore diameter	16 cm
Magnet technology	Ultra Shielded (US) superconducting magnet
Gradient Specifications	
Inner diameter	90 mm
Strength	570 mT/m (760 mT/m with high power option)
Slew rate	5130 T/m/s (6840 T/m/s with high power option)
Cooling Requirements	
He refill interval and refill volume	140 liters every 150 days
N_2 refill interval and refill volume	90 liters every 14 days
Electronics Specifications	
Number of transmit channels	2
Number of receive channels	2 (up to 16 with upgrade option)
Software Packages	
ParaVision 360 MRI Comprehensive	Including scanner control, study planning and execution, data base, export and archiving, image fusion and 3D visualization and analysis, and all standard spin echo and gradient echo imaging methods
ParaVision 360 MR Imaging Plus	Optional package including all standard, EPI, and short echo imaging methods for diffusion, perfusion, fMRI, flow imaging, relaxometry, and advanced cardiac imaging
ParaVision 360 MR Spectroscopy	Optional package including methods for single voxel spectroscopy and Chemical Shift Imaging: PRESS, STEAM, ISIS, and CSI
ParaVision 360 Method Development	Optional package providing a fully integrated, user-friendly method programming environment, including ParaVision method source code
RF Coils	
MRI CryoProbes	2 element mouse, 4 element mouse, and $^{1}H/^{13}C$
Volume coils (inner diameter in mm)	72, 60, 50, 40, 35, 25, 23, 15
Surface coils	Circularly polarized mouse brain, rat brain 3 channel optogenetic mouse brain, rat brain 4 channel mouse brain, rat brain, mouse heart, rat heart, mouse spine 8 channel mouse body, rat head Planar surface coils
X-nuclei coils	^{13}C, ^{19}F, ^{23}Na and ^{31}P 40 mm volume ^{13}C, ^{19}F, ^{23}Na and ^{31}P 20 mm surface coils ^{19}F, ^{31}P 30 mm surface coils

Bruker BioSpin

info@bruker.com
www.bruker.com