

# nanoScan<sup>®</sup> PET/CT

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Real dynamic PET-system designed  
for quantitative studies





## About us

Mediso works in the field of **medical imaging for 30+ years** with a profile of development, manufacturing, selling and servicing standalone and multi-modality imaging devices. The company offers complete solutions from hardware design to evaluation and quantification software for clinical patient care and preclinical research.

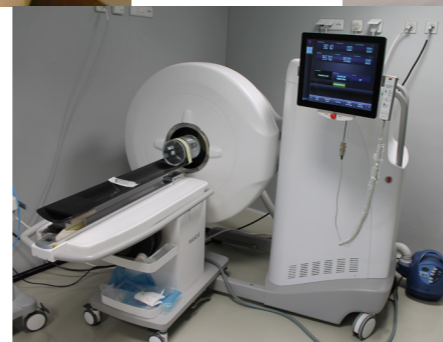
Mediso has a leader position in the preclinical imaging market with **over 300 commissioned systems** around the world. Beyond the market leading **nanoScan® PET/CT** and **SPECT/CT**, Mediso also offers standalone **MRI** and integrated **PET/MRI** systems based on a cryogen-free magnet with 3T or 7T field strength and a PET insert for simultaneous PET/MRI imaging. Products are sold directly or through a distribution network in 100+ countries worldwide

**Founded** 1990 | **Offices** 7 | **Employees** 300+ | **Publications** 3200+ | **Countries** 100+

**Preclinical systems** 300+ | **Clinical systems** 1350+



**1990** Mediso founded  
**1994** Introduction of the first Mediso gamma camera  
**2000** Nucline™ X-ring/4R, 4-head dedicated brain SPECT  
**2006** Launching the first Mediso preclinical system the NanoSPECT/CT  
**2010** Launch of nanoScan® PET/CT, world's first ever sub-mm resolution preclinical PET/CT  
**2013** Mediso USA founded  
**2014** MultiScan® LFER 150, world's first sub-mm resolution mobile PET/CT  
**2015** AnyScan® TRIO SPECT, introduction of triple SPECT detector family  
**2016** Introducing the nanoScan® PET/MRI 3T world's first superconducting preclinical PET/MRI  
**2018** Installation of the 100<sup>th</sup> nanoScan® PET system  
**2022** Installation of the 300<sup>th</sup> preclinical imaging system  
**2023** Launch of the nanoScan® MRI 7T and the PET Insert



# Key features

## PET systems

Highest resolution:

**<0.7 mm**

Largest transaxial field of view

**12 cm**

Largest axial field of view

**15 cm**

Highest count rate performance

**1300 kcps @ 80 MBq / 2.16 mCi**

- ▶ **Multiple animal** imaging
- ▶ Imaging of **short half-life isotopes**

Best NEMA sensitivity

**10.5%** (250–750 keV)

Best Minimal Detectable Activity

**60 Bq**

Largest installation base

**>150 systems**

### DESIGNED FOR DYNAMIC STUDIES

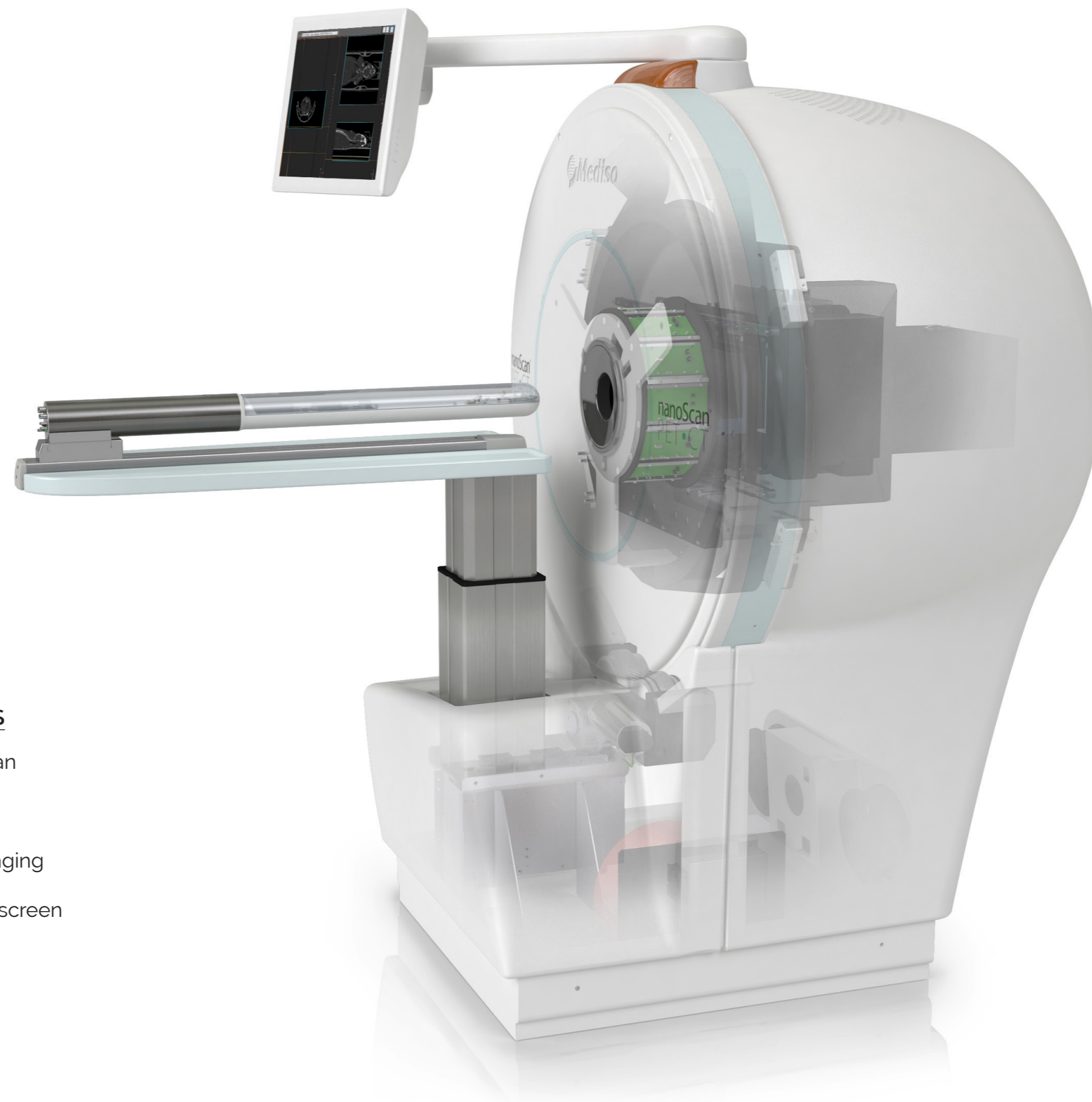
**Freely accessible animal** during the scan

Single FOV whole-body rat imaging

**Minimized dead space** for dynamic imaging

**Start dynamic acquisitions** from touch screen

Animal monitoring up to 4 animals



## CT system

High-resolution: **30  $\mu$ m**

with small voxel size: **10  $\mu$ m**

Up to  **$\times 7.6$  zoom**

Largest transaxial field of view:

**12 cm**

Highest power: **80 W** X-ray tube for

- ▶ Large animals
- ▶ Better image quality
- ▶ Fast scanning
- ▶ Ex vivo samples

Ultra-low dose protocol:

**<1 mGy** for whole-body mouse

Real-time FBP and

**iterative reconstruction**

Respiration and cardiac gated  
reconstruction

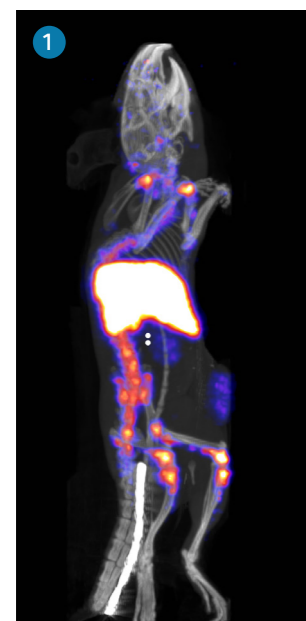
# Quantitative imaging for all applications

The nanoScan® PET subsystems are **capable of performing all PET-applications** at the highest level available on the market. Due to the ultra-fast electronics and finest crystal pixels in thick layers, the **widest dynamic range from 60 Bq to 80 MBq** is achieved. Combining this with the large axial and transaxial FOV of the PET ring, imaging of large or multiple animals simultaneously is possible.

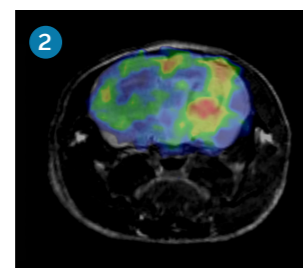
## UNCOMPROMISED APPLICATIONS WITH VERY LOW LEVEL OF RADIOACTIVITY

- ▶ Thick LSO crystals for **excellent sensitivity**
- ▶ **Short (3 ns) coincidence time window** necessary for improved signal to noise ratio
- ▶ Advanced corrections (random, scatter, LSO background, etc.) ensuring **quantification at low activity levels**
- ▶ **Best Minimal Detectable Activity: 60 Bq (1.6 nCi)**
- ▶ **Dedicated feature** of the iterative Tera-Tomo™ 3D PET reconstruction engine ensures precise quantification at very low levels of activity
- ▶ **Analytic reconstruction option (FBP)** with attenuation and scatter correction available for quantitative reconstruction of low activities close to regions with significantly higher activity
- ▶ Inherently **optimized for longitudinal studies** e.g. long-term cell tracking **1** and cardiac imaging **3**

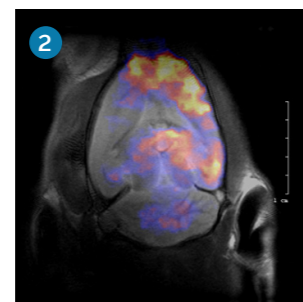
Cell tracking (<sup>89</sup>Zr)



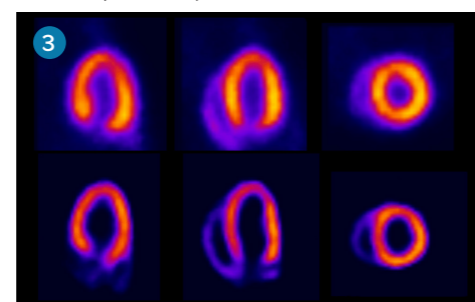
Glioma in mouse brain (FDG)



Stroke in rat brain (FDG)

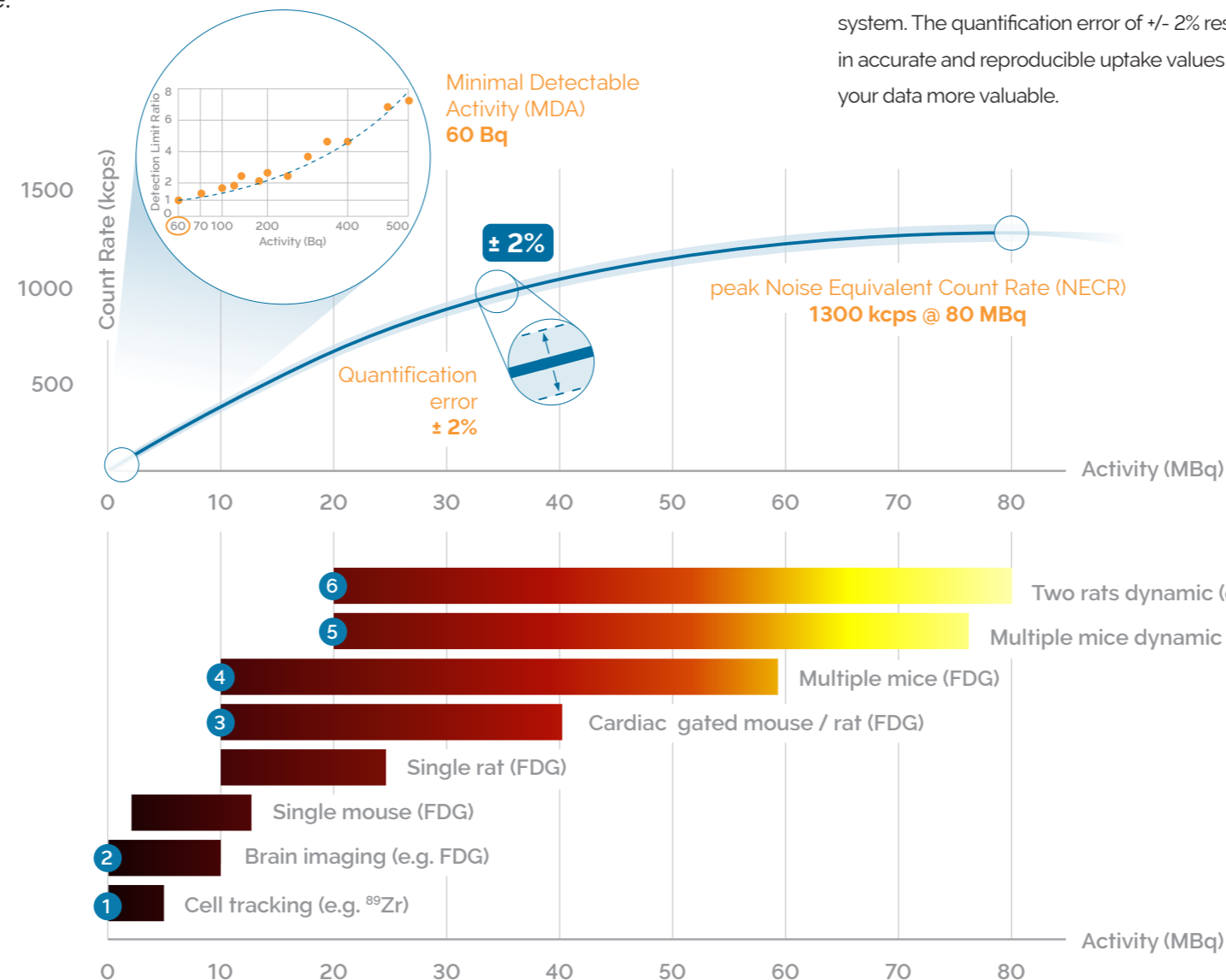


Gated myocardial perfusion



## QUANTIFICATION ACCURACY

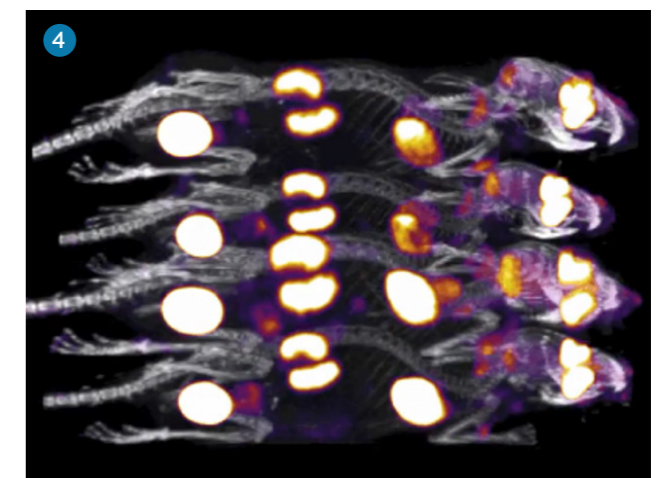
- ▶ The Tera-Tomo™ 3D PET reconstruction engine along with the most advanced detector calibration algorithms ensure a very high level of quantification accuracy through the entire dynamic range of the system. The quantification error of  $\pm 2\%$  results in accurate and reproducible uptake values making your data more valuable.



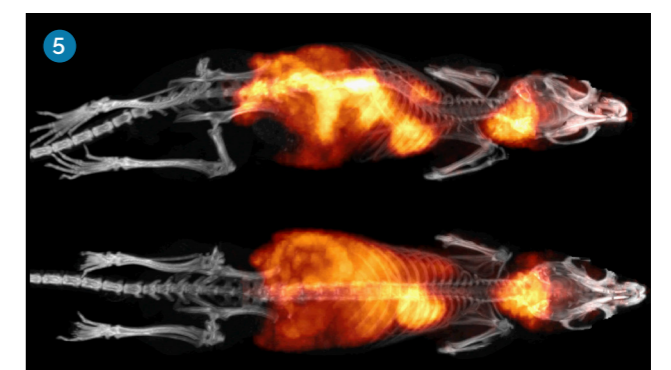
## COPING WITH COUNT RATE: MASTERING STUDIES WITH HIGH DOSE

- ▶ Multichannel read-out electronics, ultra-fast data processing and advanced dead-time correction
- ▶ **Exceptional count rate performance** – peak Noise Equivalent Count Rate (NECR) for mouse is 1300 kcps @ 80 MBq
- ▶ **Fully quantitative up to 80 MBq (2.16 mCi)** and beyond
- ▶ Suitable for **dynamic imaging of up to 4 mice 4** or **2 rats 6** simultaneously
- ▶ Optimal for imaging of isotopes with **short half-life (<sup>11</sup>C, <sup>13</sup>N, <sup>15</sup>O, etc.) 5**

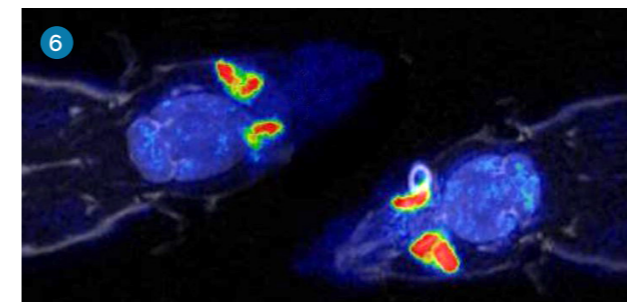
Four mice (FDG)



Two mice (<sup>11</sup>C-Choline)



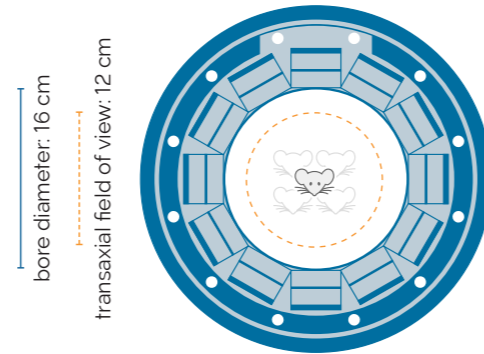
Two rats (FDG)



# Excellent image quality in the entire 12 cm TFOV

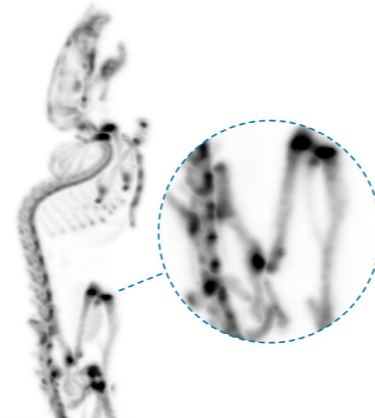
## Largest transaxial field of view

- Wide bore diameter of 16 cm allowing free access to the animals
- Large transaxial field of view of 12 cm
- Excellent homogeneity over the entire field of view
- Suitable for various animal models from tiny mouse (25 g) to large rabbits (6.5 kg)
- Simultaneous multiple animal imaging (up to 4 mice or 2 rats) with individual physiological monitoring



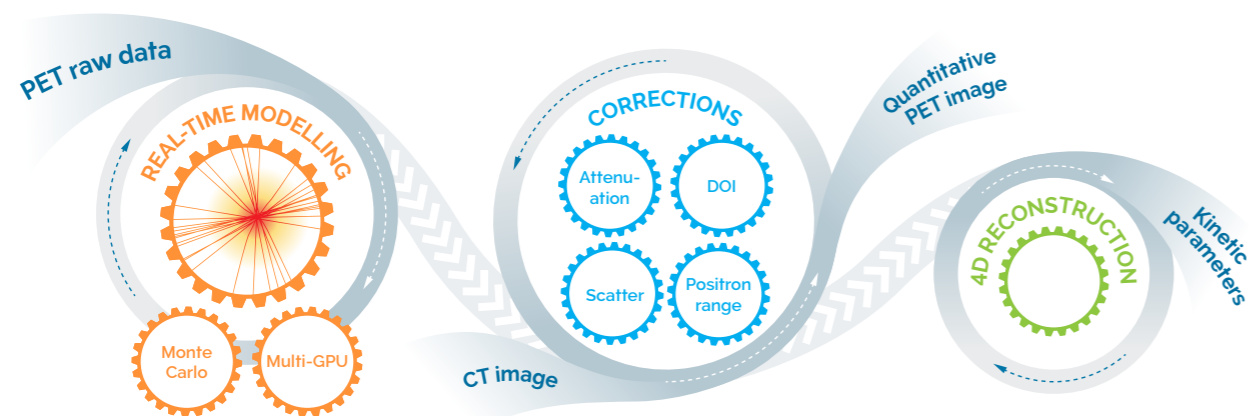
## Resolving precise details with 700 µm spatial resolution

- Finest (1.12 mm×1.12 mm) lutetium oxyorthosilicate (LSO) crystal needles provide precise signal localization preserving spatial information in raw data
- Tera-Tomo™ 3D PET iterative reconstruction with real-time Monte Carlo based physical modelling unveiling the tiniest details on the image
- Large ring diameter and statistical depth of interaction compensation offer homogeneous image quality over the entire field of view



## Tera-Tomo™ image reconstruction

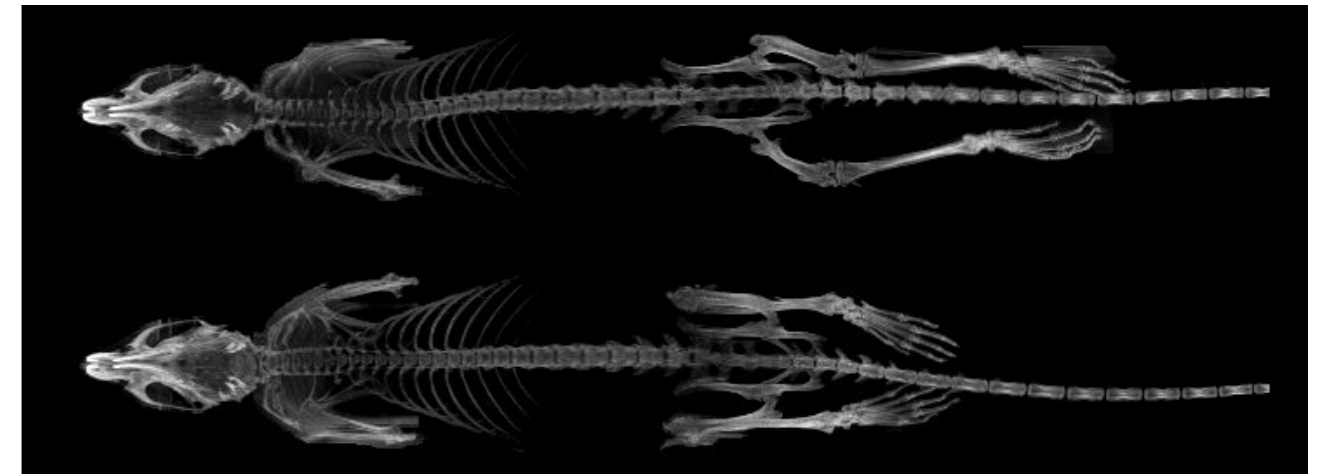
Our proprietary iterative reconstruction engine, used in both clinical and preclinical systems ensures quantitative results with excellent resolution for all PET isotopes.



- 3D iterative reconstruction applying deep Monte Carlo based physical modelling of particle-level interaction from positron emission to detection
- Advanced corrections for energy, time, dead-time, for random events and for positron range
- CT-based attenuation and scatter correction
- Automated workflow with 4D multiparametric PET reconstruction for fast kinetic analysis of dynamic acquisitions

# High power CT with large FOV and high resolution

Up to 80 W X-ray power enables high-performance scanning even for large or multiple animals. The high power, large field of view, high resolution nanoScan® CT system offers all the features (very high throughput, real-time and iterative reconstruction, ECG and respiratory gated reconstruction) not only required to support multi-modal studies, but for standalone CT-applications as well.



## Highest power with largest FOV

The high power (80 W) X-ray together with the largest field of views (12 cm transaxial and 45 cm helical scan range) enables high performance scanning of even large or multiple animals. Very high throughput is also ensured by the fast scanning, real-time reconstruction and multiple animal imaging capability.

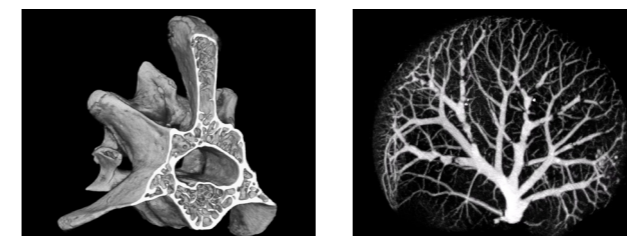
Moreover, the high X-ray power enables better image quality and ultra-low dose protocol (<1mGy for a whole body mouse) crucial for longitudinal studies.

## Lowest dose preclinical CT

The high power of the X-ray tube enables stronger filtering and more monochromatic beam resulting in by far the lowest dose preclinical CT on the market. The ultra-low dose protocol of the nanoScan® CT enables whole-body mouse scans for anatomical reference and material map need for quantitative PET or SPECT imaging, with <1mGy radiation dose, that is crucial for reliable longitudinal studies, e.g. following tumour growth or therapy response.

## High resolution

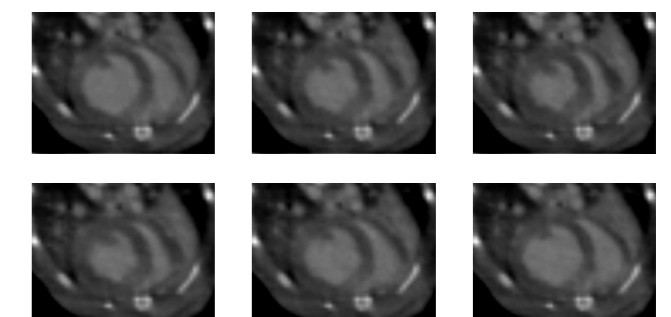
The system offers variable magnification (up to x7.6) for high-resolution imaging even with 10 µm isotropic voxel size. Low noise and excellent image quality are also ensured by iterative image reconstruction.



Mouse vertebra and liver (10 µm and 20 µm voxel size)

## ECG and respiratory gating

Cardiac and respiratory gated CT studies are also available both for reducing motion artifacts and for analysis of cardiac and pulmonary function.

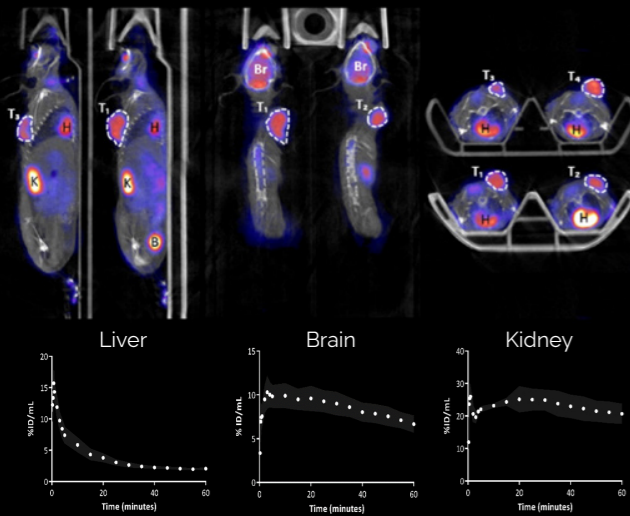


ECG gated mouse CT

# PET/CT Applications

## Simultaneous dynamic multiple animal imaging

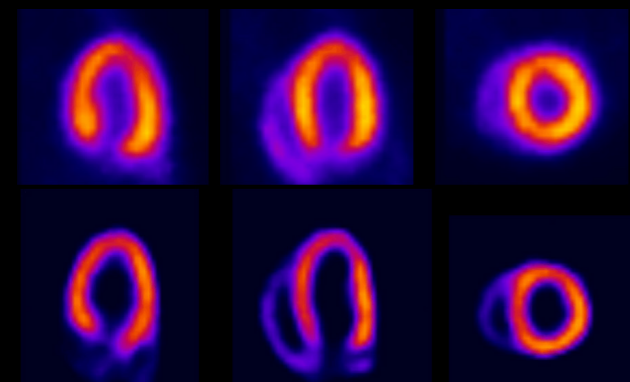
Simultaneous dynamic scan of 4 mice. Temperature control and physiological monitoring of all animals ensure quantitative readout of metabolic activity of organs.



ANIMAL: 4×20g mice  
 RADIOTRACER: 3.7 MBq (100  $\mu$ Ci)  $^{18}$ F-FDG  
 ACQUISITION: dynamic PET  
 Greenwood et al *JNM* 2020, 61 (2) 292-297

## Cardiac gated mouse and rat imaging

High resolution and advanced reconstruction enables high quality cardiac gated PET imaging, where even the right ventricle of the mouse is visible.

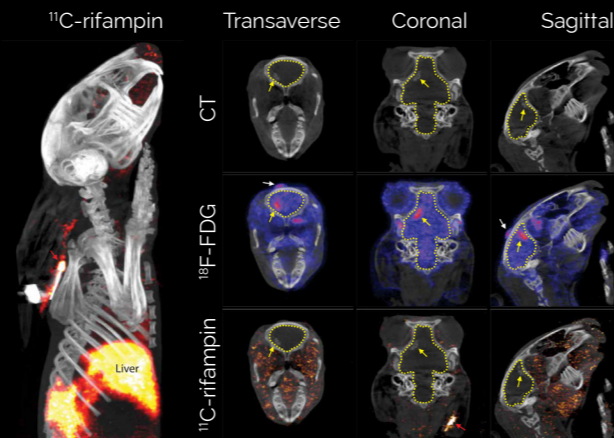


ANIMAL: 18 g mouse  
 RADIOTRACER: 13.3 MBq (360  $\mu$ Ci)  $^{18}$ F-FDG  
 ACQUISITION: ECG-gated PET, 8 frames  
 ACQUISITION TIME: 90 minutes

ANIMAL: 220 g rat  
 RADIOTRACER: 30.8 MBq (830  $\mu$ Ci)  $^{18}$ F-FDG  
 ACQUISITION: ECG-gated PET, 8 frames  
 ACQUISITION TIME: 60 minutes

## Tuberculosis imaging in rabbit with $^{11}$ C-rifampin

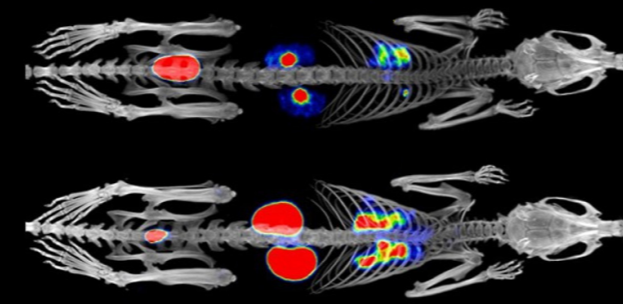
Dynamic and longitudinal  $^{11}$ C-rifampin PET/CT imaging provided reliable data for optimized TBM treatments.



ANIMAL: New Zealand White rabbit  
 RADIOTRACER: ~66 MBq (1.8 mCi)  $^{11}$ C-rifampin, ~20 MBq (0.55 mCi)  $^{18}$ F-FDG  
 ACQUISITION: dynamic PET 30 min  
 Tucker et al *Sci. Transl. Med.* 10, eaau0965 (2018)

## $^{68}$ Ga-Ornibactin for bacteria infection imaging

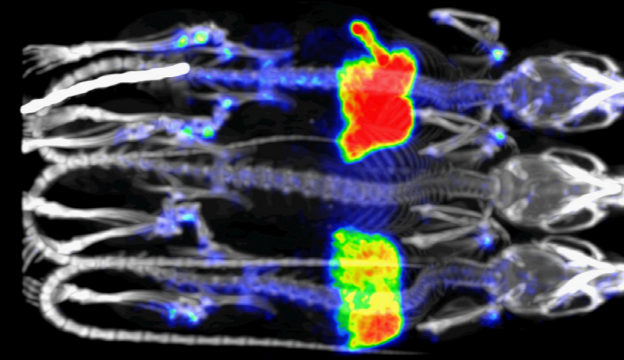
The system is able to handle the long positron range of  $^{68}$ Ga and provide quantitative results showing, that  $^{68}$ Ga-ORN complex accumulates at the site of Burkholderia multivorans infection, including pneumonia, in two animal infection models.



ANIMAL: female 8- to 10-week-old Lewis rat, lung infection model  
 RADIOTRACER: 5 MBq (0.8  $\mu$ Ci)  $^{68}$ Ga-ORN  
 ACQUISITION: 2-FOV PET  
 Bendova et al *J. Med. Chem.* 2023, 66, 11, 7584-7593

## In vivo cell tracking $^{89}$ Zr

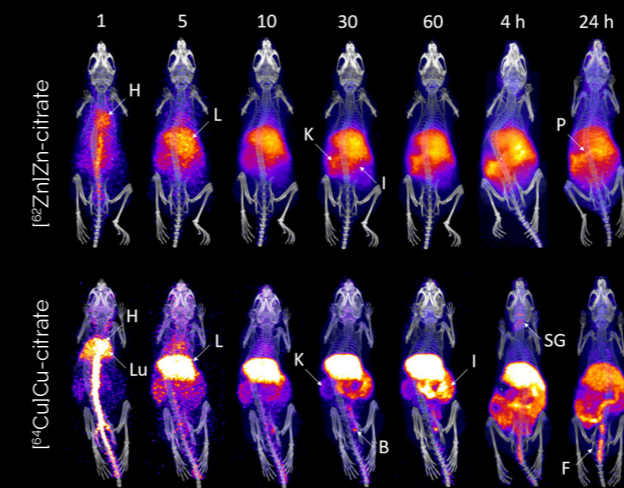
The system enables quantitative studies with extremely low activities like in case of longitudinal cell tracking studies. The image below shows the last data point of a study taken on 17th day post-injection.



ANIMAL: 3×20 g mice  
 RADIOTRACER: 30 kBq (0.8  $\mu$ Ci)  $^{89}$ Zr labelled cells  
 ACQUISITION: static PET

## Imaging zinc trafficking in vivo with $^{62}$ Zn

Whole-body biodistribution of  $^{62}$ Zn-citrate was investigated in vivo, and then compared with  $^{64}$ Cu-citrate as a control to distinguish the biodistribution of  $^{62}$ Zn from that of its daughter  $^{62}$ Cu, present at the time of injection.



ANIMAL: Female BALB/c (9-11 weeks)  
 RADIOTRACER: ~5 MBq (0.14mCi)  $^{62}$ Zn-citrate and  $^{64}$ Cu-citrate  
 ACQUISITION: dynamic PET 60 min, 4 h, and 24 h p.i.  
 Firth et al *Metallomics*, 14, 2022, mfac076

## Whole-body angiography of rat's vasculature

Whole-body angiography of a large (500 g) rat's vasculature after contrast agent injection into the left carotid artery.

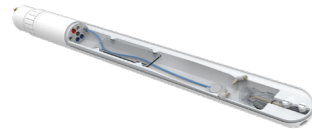


ANIMAL: 500 g Wistar rat  
 ENERGY: 50 kVp  
 TUBE POWER: 80 W  
 ACQUISITION TIME: 5 min

## MultiCell™ imaging chambers

### Mouse L (Standard)

Inner space: 141×31 mm  
Outer dimension: 466×40 mm  
Up to 80 g  
Also available in BSL3 version



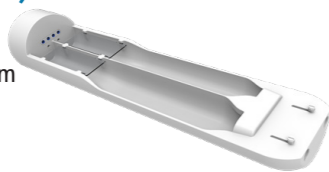
### Rat L

Inner space: 249×60 mm  
Outer dimension: 580×70 mm  
Up to 600 g



### Rat Dual (Side-by-Side)

Inner space: 2×55×400 mm  
Outer dimension: 118×579 mm  
Up to 2×300 g



### Mouse Triple

Inner space: 144×26 mm  
Outer dimension: 488×70 mm  
Up to 3×30 g



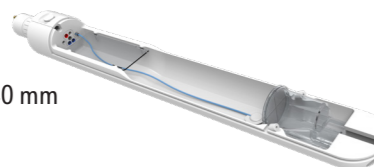
### Mouse Quadruple

Inner space: 4×30×194 mm  
Outer dimensions: 85×524 mm  
Up to 4×60 g

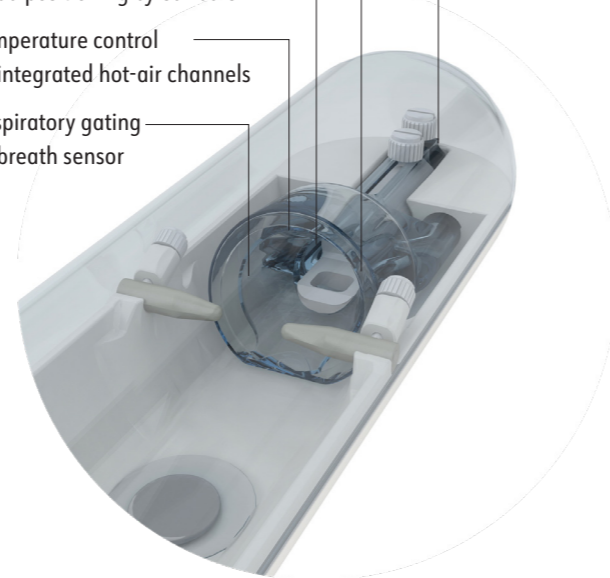


### Marmoset

Inner space: 65×440 mm  
Outer dimensions: 70×540 mm  
Up to 600 g



Anesthesia gas absorption by nose cone  
Inhalation through tooth bar  
Head positioning by ear bars  
Temperature control by integrated hot-air channels  
Respiratory gating by breath sensor



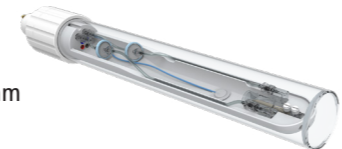
### Rat Dual (Head-to-Head)

Inner space: 240×60 mm  
Outer dimension: 590×70 mm  
Up to 2×200 g



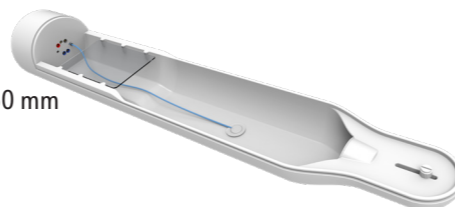
### Mouse BSL-3

Inner space: 141×31 mm  
Outer dimension: 578×60 mm  
Up to 80 g



### Rat XXL

Inner space: 102×510 mm  
Outer dimensions: 110×650 mm  
Up to 1.5 kg



### Rabbit

Inner space: 150×600 mm  
Outer dimensions: 160×760 mm  
Up to 6.5 kg



## Monitoring and gating

- » ECG monitoring and triggering
- » Respiration monitoring and triggering
- » Temperature monitoring and control module
- » Accessible from touchscreen and workstation



**Respiration and body temperature monitoring even for four animals**

## PrepaCell™

Supporting complete animal preparation before the scan, setting of:

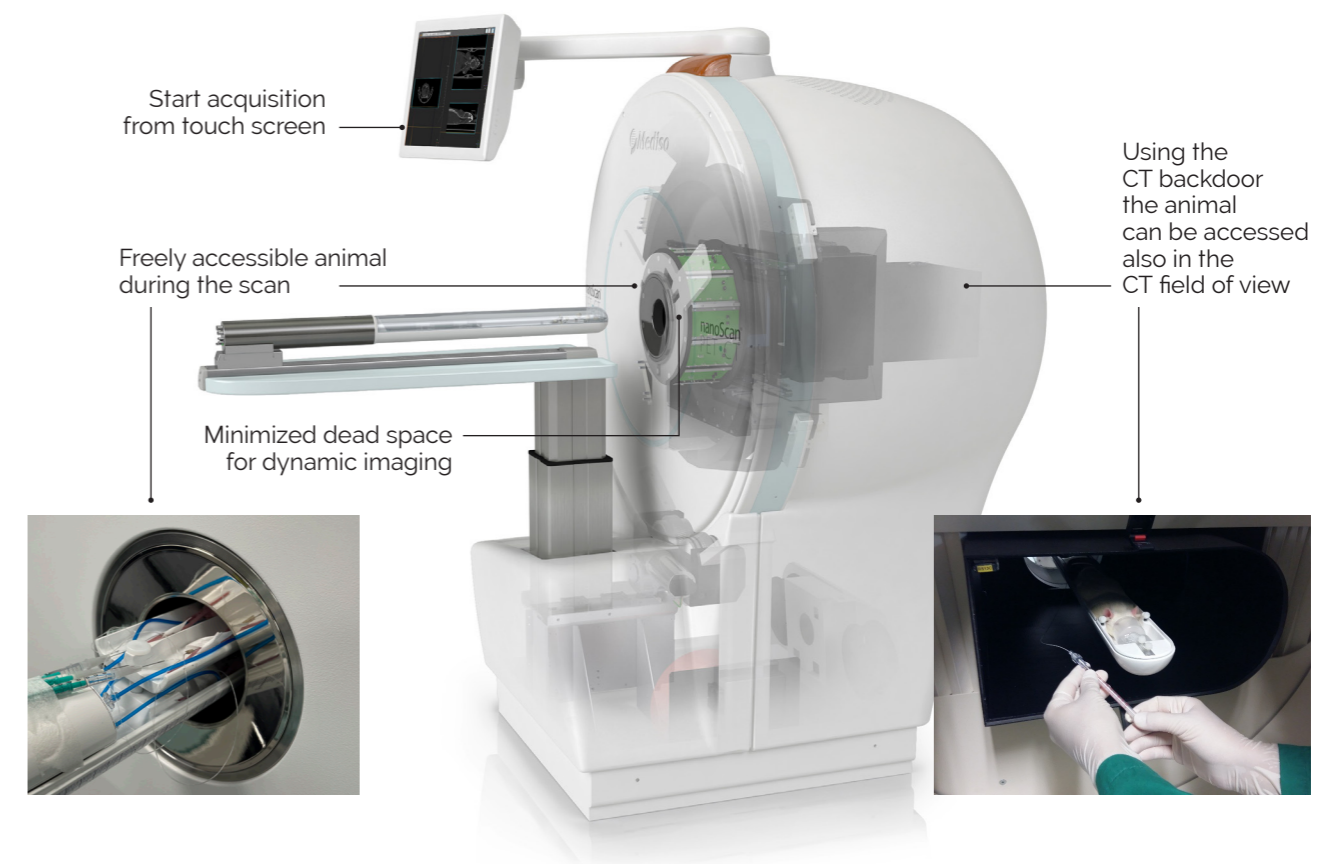
- » Anaesthesia
- » Heating
- » Vital function monitoring

**Eases workflow and increases throughput**



## Free access to the animal

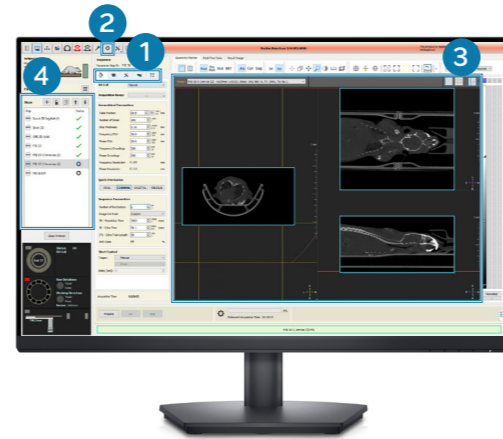
For dynamic PET-studies it is **crucial to have free access to the animal** and to avoid the use of long catheters. The nanoScan® PET/CT system is designed to master these needs and to offer the best possible solution with clearly visible and accessible animal in the PET field of view.



# Complete PET/CT workflow

## Perform routine scans with the clinical validated Nucline™ acquisition software

Nucline™ acquisition software has been developed for **multimodal** medical imaging devices, and is used in **clinical and preclinical** systems as well. It provides the same easy-to-use, integrated framework and main features for all the different modalities (**PET, SPECT, CT and MRI**). It integrates wide range of functionalities of acquisition, calibration, data management, reconstruction, and visualization. Nucline™ has been developed with focus on **clean and user-friendly interface**, while complying to **industry standards** (21 CFR p11, DICOM) and high level **cybersecurity** expectations.

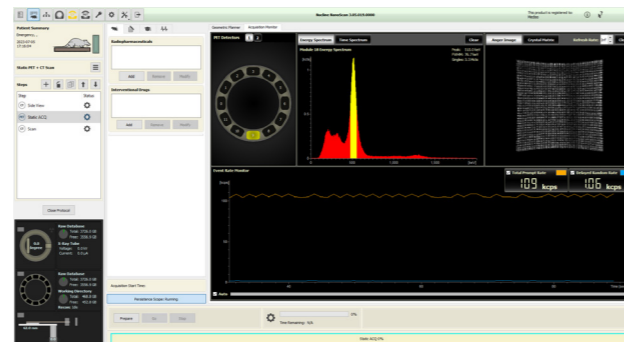


### 1 PERSONALIZED ACCESS LEVELS

- **Routine:** A couple of clicks and the system is ready to run a study-specific, optimized protocol. Only geometry is to set: error-free scanning guaranteed.
- **Advanced:** Several acquisition and reconstruction parameters are editable providing the chance to further optimize the protocols for the study.
- **Research:** Access for all system parameters for researchers with significant experience

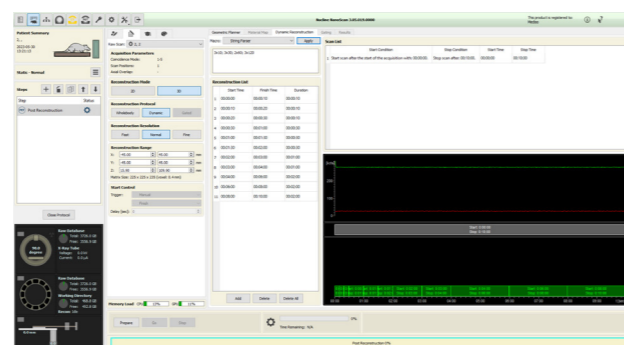
### 2 FOCUS ON QUALITY

- Automatic, quick daily QC protocols
- Real-time diagnostic – including energy and time spectra as well as total and random rate display – for verifying successful injection of radioactivity
- Logged diagnostic data



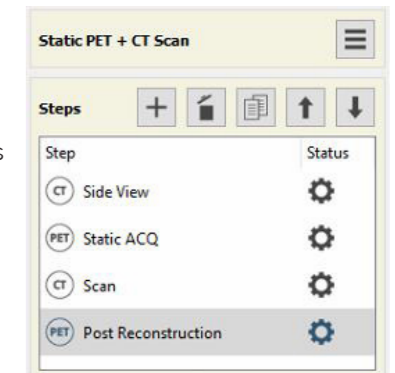
### 3 INTUITIVE GEOMETRIC AND DYNAMIC PLANNER

- Designing scans graphically based on CT scout
- Start PET and CT scanning by 2 clicks using the predefined protocols
- Handle radiotracer information easily, even during scanning to save time
- Design dynamic frames and even multi-FOV dynamic scans and reconstructions graphically
- Copying FOV from one modality to other
- Easy-to-use image viewer to quickly check the result image before next step



### 4 PREDEFINED, CONFIGURABLE PROTOCOLS

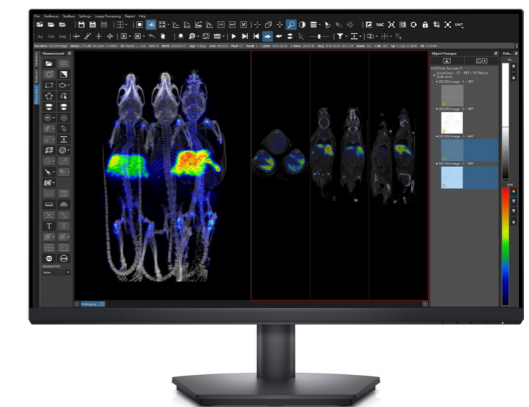
- Multimodality multi-step factory protocols optimized for various applications
- Factory protocols can be copied, edited, fine-tuned by the User
- Application specific User protocols can be saved and loaded easily assuring quick, reliable scanning
- Protocol steps can run automatically one by one



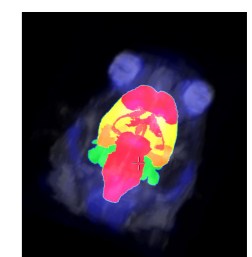
## Analyze your quantitative data with the FDA approved InterView™ FUSION visualization and evaluation software

The FDA approved and clinically validated InterView™ FUSION multi-modal post-processing software is an essential part of system. It provides a wide range of functionalities to evaluate PET/SPECT/CT/MRI preclinical data for example:

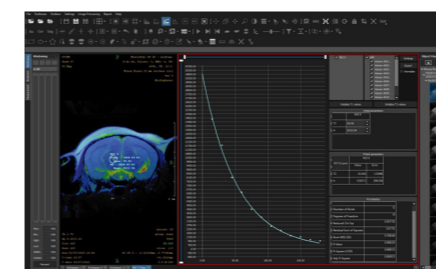
- Automatic multiple animal image separator
- Brain atlas
- Wide range of 2D and 3D image viewers and rendering for visualization including 3D MIP and 3D Volume Rendering
- 3D and 4D data fusion via all image viewers and visualization of them over time frames
- Large variety of ROI/VOI tools
- Time Activity Curves (TAC) of multiple ROIs/VOIs over 4D dynamic data with multiple statistics (min, max, mean, stdev, sum, etc.)
- Automatic co-registration procedures (rigid, affine and non-linear)



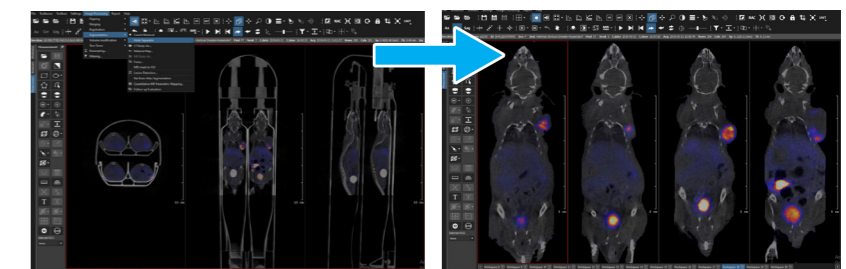
- Advanced segmentation methods
- Wide range of data input/output/export capabilities including video formats



Brain atlas



Automatic MRI parametric evaluation



Automatic multiple animal image separator

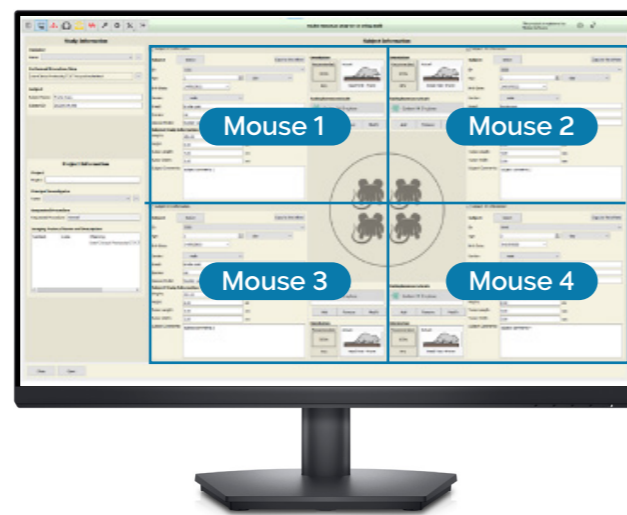


# Throughput quadrupled

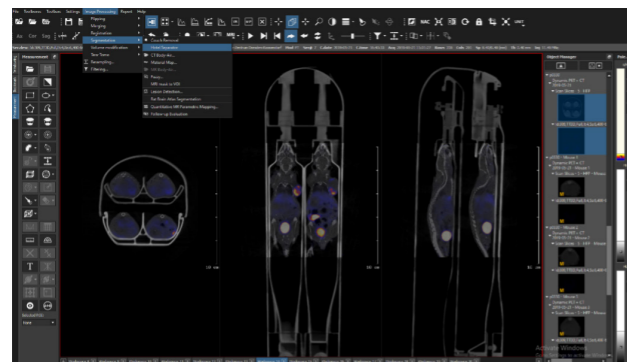
## Fully automated workflow for multiple-animal imaging

With the fully automated complete multiple-animal workflow the improvement in throughput is not limited to acquisition but enables **significant improvement** in **reconstruction** and **image analysis time** as well. There is no need to any manual modifications in animal or dose data, the solution offered takes care of the whole process **automatically**, ensuring **quantitative SUV** data in the end.

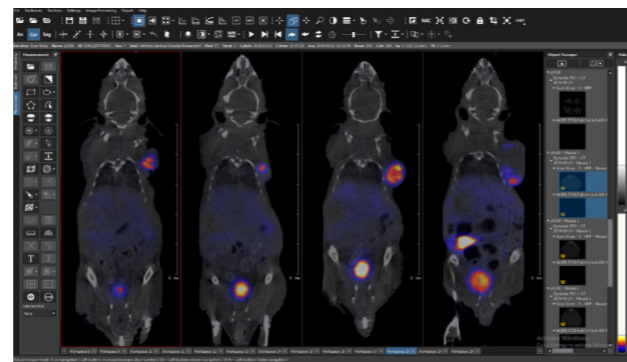
- Record animal data (animal ID, weight, injected activity, etc.) for all animals separately and store it in the raw acquisition file.
- Acquisition is as simple as a single animal scan - with **individual physiological monitoring** for all animals
- Reconstruction: The whole scanned volume can be reconstructed within a couple of minutes
- Automatic erasing of the chamber in the Inter-View™ FUSION software in one click of a button
- Automatic separation of animal images to individual DICOM sets
- Applying **dose and weight information** separately and save them to the DICOM header:



Quantitative SUV data for each animal automatically.



Automatic erasing of the chamber



Automatic separation

### Four mice scanning without compromise

The **large bore size** (16 cm) and **transaxial field of view** (12 cm) of the nanoScan® PET/CT system enables scanning of **four mice, each up to 60 g** simultaneously. With the nanoScan® system there is no **need to squeeze** the animals in very small diameter containers that results in limitation in animal size and degradation in image quality due to possible spill over.

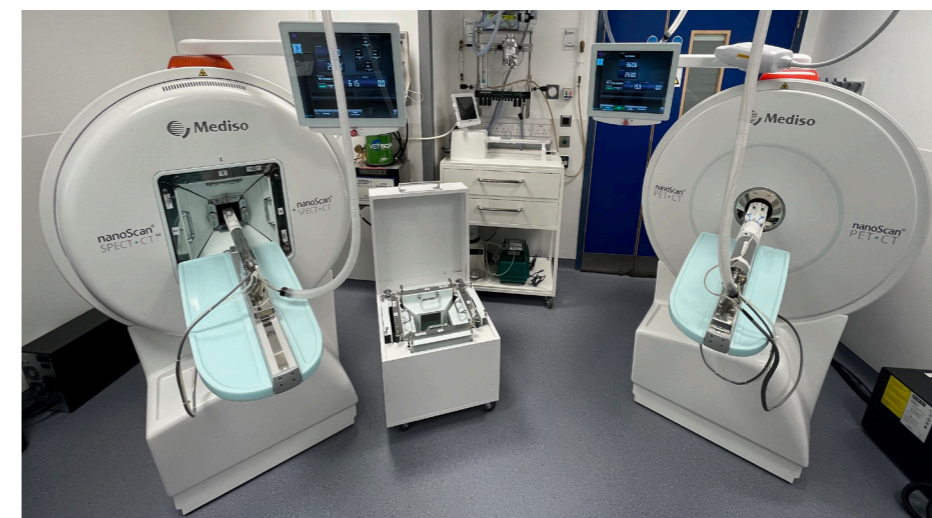


Scanning of four "normal-sized" mice

# Flexible options for installation

The nanoScan® PET/CT system is designed to have small footprint and to be installed in any lab. At the same dynamic PET-imaging capabilities are supported with all possible means i.e. free access to the animal in the PET-ring, minimal dead space and starting acquisition from the touchscreen.

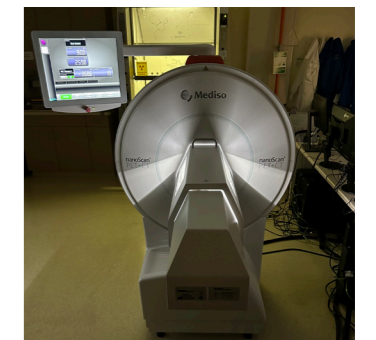
As X-ray safety is an important topic for every imaging lab, the nanoScan® PET/CT fits all possible requirements. From closed box X-ray option to open CT system in separate acquisition room various possible configuration are offered.



nanoScan® PET/CT and SPECT/CT reference installation of two systems in one small laboratory

### CLOSED BOX CT OPTION

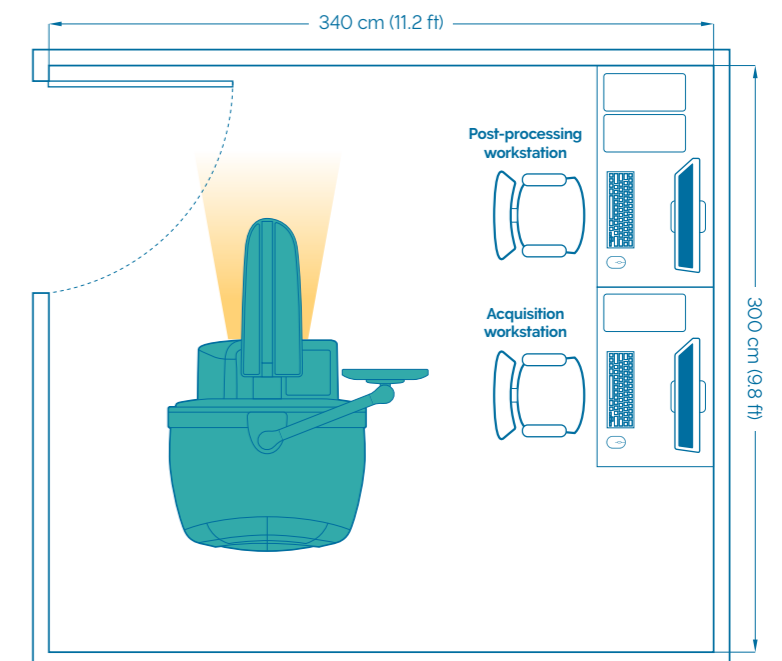
Available option ensuring zero radiation emission in the imaging room.



Closed box CT option installed

## Minimal installation requirements

- Light-weighted systems with small footprint: 650 kg, 1760 x 1050 mm (L x W)
- No need for control or technical room. All workstations can be placed next to the system
- Post-processing workstation can be next to the acquisition workstation or at the researcher's room
- Acquisition can be started from touchscreen
- As the nanoScan® PET/CT is a closed and properly shielded system (compliant with the regulations of IEC/EN 60601-1-3 12.4 and 12.5), it is not necessary for the operator to leave to camera room even in standard configuration.



**nanoScan® MRI 3T/7T**  
High-end MRI with the most robust cryogen-free magnet on the market



## MRI

100% CRYOGEN-FREE • ROBUST MAGNET

- 3T and 7T field strength
- 100% Cryogen-free magnet
  - » No liquid helium or nitrogen
  - » Closed loop – no need to top-up helium
- Wide-range of RF Coils and Sequences
- Compact design:
  - » Small footprint
  - » Marginal fringe field
  - » 480 / 970 kg (3T / 7T)
  - » 1050 / 2140 lbs (3T / 7T)
- Powerful Gradient: (up to 1050 mT/m) for DWI application
- Low-vibration, rear mounted PulseTube cryocooler for artefact free DWI-EPI
- SmartMagnet™
  - » Eco-friendly idle mode
  - » Active quench protection
- Upgrade possibility with 2-types of completely integrated PET systems

**nanoScan® PET/MRI 3T and 7T**

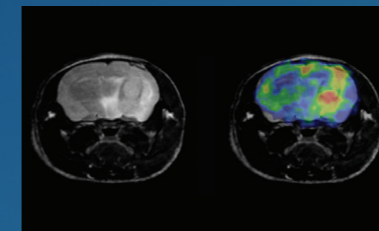
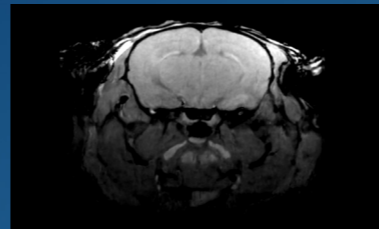
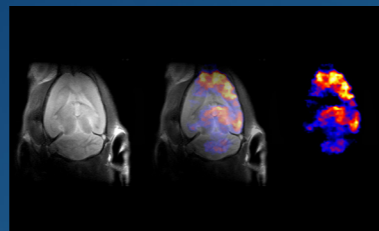
Full-scale, quantitative PET combined with a robust, cryogen-free MRI



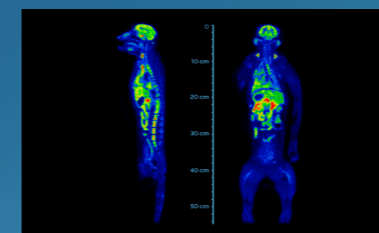
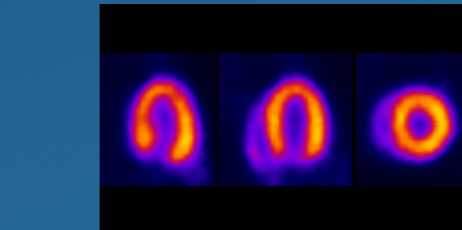
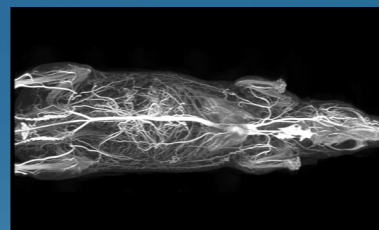
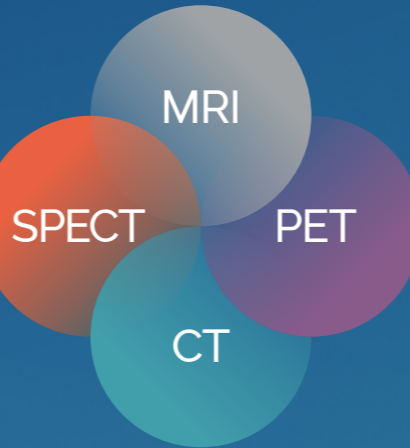
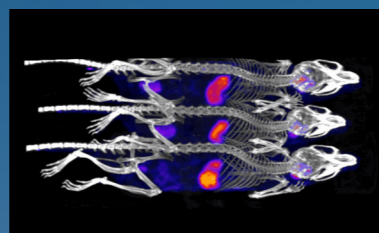
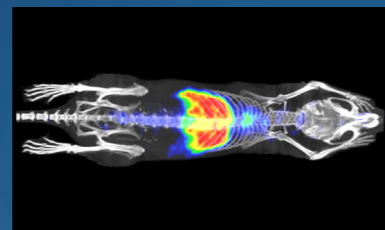
## SPECT

HIGH SENSITIVITY • HIGH RESOLUTION • OUTSTANDING THROUGHPUT AT THE SAME TIME

- High resolution (0.3 mm *in vivo*) and high sensitivity 13 000 cps/MBq
- Largest field of view for large and multiple-animal imaging
- High throughput
- Largest installation base 130+
- Highest flexibility:
  - » Wide isotope energy range, single or multiple: 20 keV – 1 MeV
  - » Various applications – optimized
- multi-pinhole collimators (e.g. MDP bonescan, dynamic, cardiac gated etc.)
  - » Animal models from tiny mouse up to large rabbit (6.5 kg)
  - » Different imaging schemes: helical, circular, full-stationary, 2D
  - » Parallel-hole collimators for imaging large animals
  - » List-mode acquisition



**nanoScan® SPECT/CT**  
Versatile SPECT/CT with absolute quantification and full-stationary dynamic imaging



## PET

BEST COUNT RATE PERFORMANCE • HIGHEST RESOLUTION WITH FREE ACCESS TO THE ANIMALS

- Highest resolution (< 0.7 mm)
- Largest transaxial field of view (12 cm)
- Largest axial field of view (up to 15 cm)
- Highest count rate performance (up to 1300 kcps @ 80 MBq) supporting quantitative imaging in
  - » Radiotracer development
  - » Imaging of short half-life isotopes (e.g. <sup>11</sup>C, <sup>13</sup>N, <sup>15</sup>O)
  - » Multiple-animal imaging
- Free access to the animal supporting dynamic imaging
- Best NEMA sensitivity up to 10.5% (250-750 keV) and best Minimal Detectable Activity (MDA)
- Excellent quantification
- Largest installation base: 150+

**nanoScan® PET/CT**

Real dynamic PET-system designed for quantitative studies



**nanoScan® SPECT/CT/PET**  
Versatile SPECT with Real dynamic PET with absolute quantification



## CT

HIGH POWER • HIGH RESOLUTION • LARGE FIELD OF VIEW

- High-resolution (30 µm)
  - Small voxel size (10 µm)
- Up to x7.6 zoom
- Variable transaxial field of view: 2–12 cm
- Highest power: 80 W X-ray tube for
  - » Large animals
  - » Better image quality
- Fast scanning
- Ex vivo samples
- Ultra-low dose protocol (<1 mGy for whole-body mouse)
- Real-time FBP and iterative reconstruction
- Respiration and cardiac gated reconstruction

**MultiScan™ LFER 150 PET/CT**

The ultimate tool for PET imaging in primates and medium sized animals



# Specifications | nanoScan® PET/CT

## PET

### Gantry opening

16 cm

### Transaxial FOV

12 cm

### Axial FOV

15 cm

### Spatial resolution with

**Tera-Tomo™ (3D OSEM)**

0.7 mm

### Spatial Resolution with

**FBP (NEMA)**

1.25 mm

### Sensitivity

10.5% (250–750 keV)

### Noise Equivalent Count Rate

**for mouse (NEMA)**

1300 kcps @ 80 MBq / 2.16 mCi

### Animal models

mouse, rat, marmoset, guinea pig, rabbit

### Multiple animal imaging

up to 4×60 g mice and 2×500 g rats

### Detector crystal

LSO (1.12×1.12×13 mm)

## CT

### Gantry opening

16 cm

### Transaxial FOV

12 cm

### Axial FOV

10 cm

### X-ray power

up to 80 W

### Spatial resolution

30 µm at 10 µm voxel size

### Ultra low-dose protocol

down to 1 mGy for whole-body mouse

### Animal models

Mouse, rat, marmoset, guinea pig, rabbit

### Multiple animal imaging

up to 4×60 g mice and 2×500 g rats

### Image reconstruction

modified Feldkamp-type for real-time reconstruction, iterative for low-dose and low-noise applications

300+ preclinical systems in  
33 countries



nanoScan®  
PET/CT

nanoScan®  
SPECT/CT

nanoScan®  
MRI 3T/7T

nanoScan®  
PET/MRI 3T and 7T

nanoScan®  
SPECT/CT/PET

MultiScan™  
LFER150 PET/CT



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