



MICROLAB IMAGING SYSTEM

Photon Counting CT for Advanced Research
DISCOVERY BEYOND CONVENTIONAL LIMITS



Features and Capabilities

1. Better Image Quality

- Enables ultra-high 0.09 mm slice thickness for visualization of anatomical structures
- Spectral-based native metal artefact suppression¹

2. Multi-Material Spectral Identification

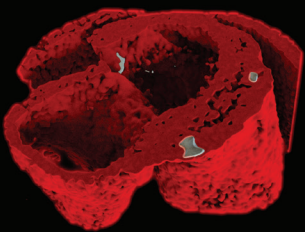
- Generate quantitative and material maps to identify and quantify multiple high-Z elements in both standard and novel contrast agents, and nanoparticles in a single scan.^{1,2,3}

3. Advanced Research Software Suite

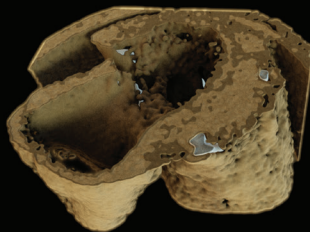
- Full access to raw and reconstructed image data for custom algorithm development
- Advanced tools for material identification and quantification
- Quantitative comparison tools for monitoring disease progression

Material Identification and Quantification

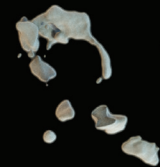
Scan of an excised carotid atherosclerotic plaque⁴



Water and calcium



Fat and calcium



Calcium only

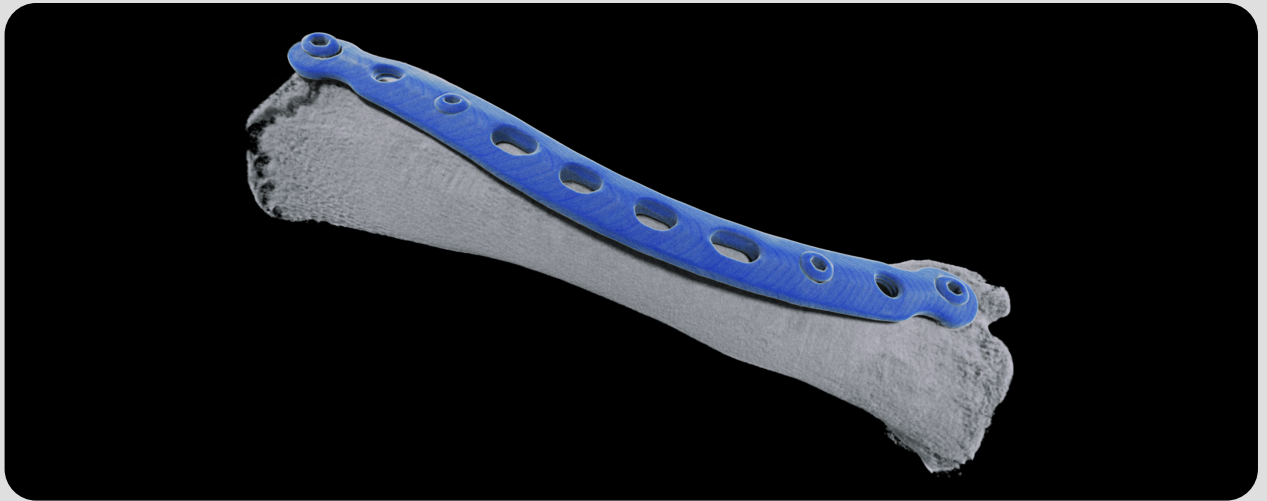
4. Intuitive Small Animal Imaging

- Accommodates a broad range of subjects
- High-resolution imaging packages optimized for translational animal research*

5. Designed for the Lab

- Easy to use scanner – Plug & Play
- Fully lead shielded and mobile imaging system
- User interface designed to streamline lab work

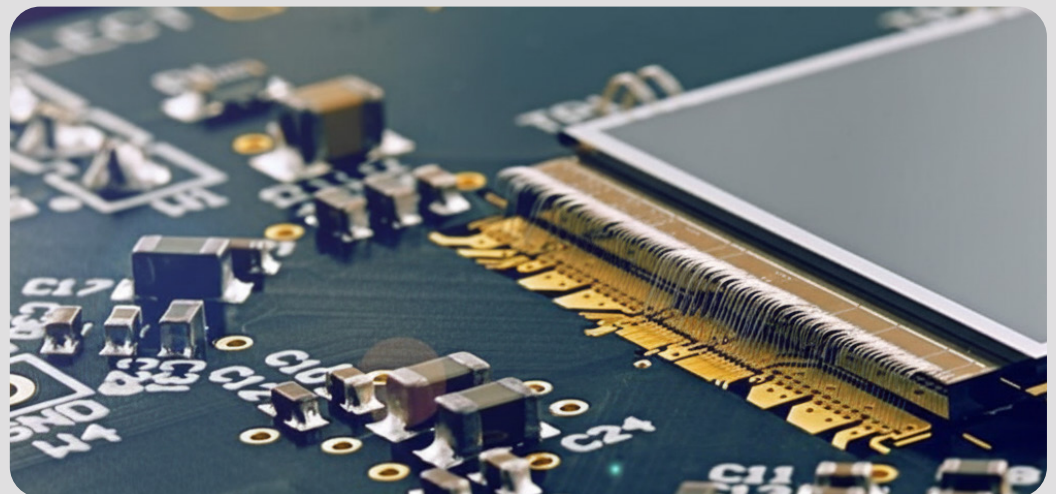




Imaging of Bone with metal plate Native Metal Artefact Removal Reconstruction¹

MARS Detector Redefining the Fundamentals

- MARS integrates CERN's Medipix3 detector for exceptional spatial and energy resolution
- Acquires data in up to user defined 5 energy bins enhancing material analysis
- Eliminates inter-pixel energy cross-talk using charge summing to deliver multi-Energy data.

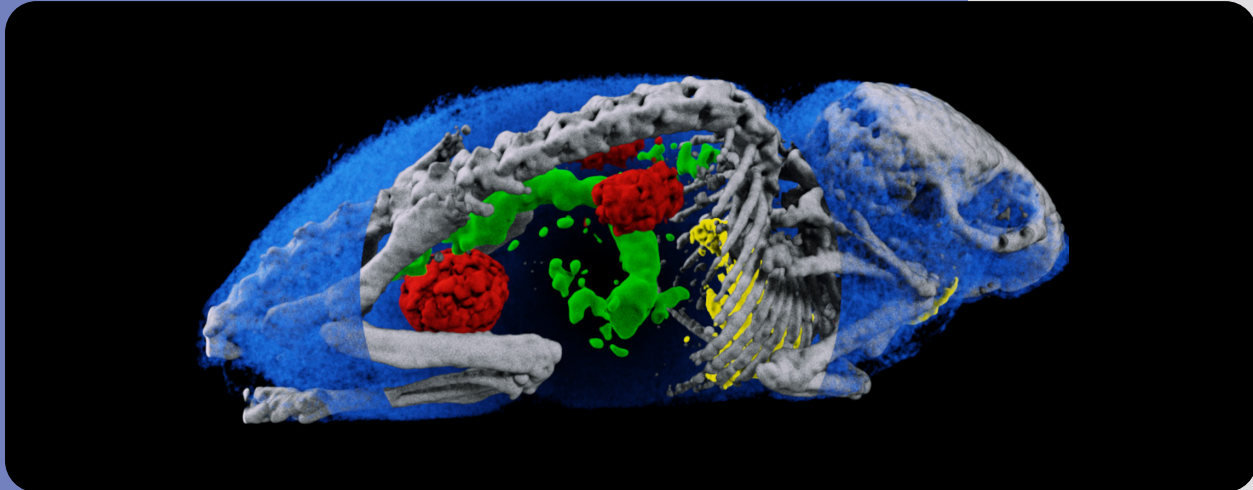


Photon Counting Detector - CERN⁵



About Us

MARS Bioimaging Ltd is a New Zealand-based medical imaging technology company established in 2007, specializing in the development and manufacture of photon counting CT imaging systems. Recipients of the "Best Innovation in Health & Science" and "Best Emerging New Zealand Innovation" awards, among others, MARS Bioimaging stands at the forefront of next-generation diagnostic imaging.



Imaging of Mouse with HA, Water, Iodine, Gadolinium⁶

Technical Specifications

Detector: CdTe PCD

Energy Bins: 5

Isotropic Resolution: 90 microns

X-ray Tube: 25KHU

Tube Voltage: 118 KV

Tube Current: 10 - 340 micro-Amps

Focal Spot: 0.07mm

Gantry bore: 12cm

Data output: Raw data, DICOM, material maps

Design: Fully lead shielded for operation in most biomedical facilities

REFERENCE

¹Assessment of material identification and quantification in the presence of metals using spectral photon counting CT 10.1371/journal.pone.0308658

²Element-specific spectral imaging of multiple contrast agents: a phantom study: 10.1088/1748-0221/13/02/T02001

³Measuring Identification and Quantification Errors in Spectral CT Material Decomposition 10.3390/app8030467

⁴Spectral CT of carotid atherosclerotic plaque: comparison with histology 10.1007/s00330-012-2538-7

⁵CERN is the world's largest particle physics facility based in Geneva

⁶Garnett R. A comprehensive review of dual-energy and multi-spectral computed tomography Clinical Imaging, 2020; 67, 160-169

*Disclaimer: Not recommended for in vivo (live animal) cardiac and respiratory imaging.

Intended Use: This brochure is for research purposes only. Not for clinical diagnostic purposes.

CONTACT US

MARS Bio Imaging Pvt Ltd

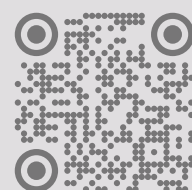
68, St Asaph Street,

Christchurch,

New Zealand 8011

www.marsbioimaging.com

sales@marsbioimaging.com



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