Vevo® LAZR-X

The world’s only customizable imaging platform combining ultra high frequency ultrasound and photoacoustics

Experience the next generation of in vivo multi-modal imaging where volumetrics, hemodynamics, oximetry and biomarker detection are all at your fingertips.

- Fusion of anatomical, functional and molecular data
- Superior resolution (down to 30 µm)
- Customizable touch-screen interface
- Compact and portable system
- Open access imaging environment

Explore the possibilities in...

Oncology

Molecular Biology

Cardiology

Neurobiology

(See page 6 for more details)
What is photoacoustics?
The photoacoustic effect is the generation of sound by the absorption of pulsed light.

Benefits of photoacoustic imaging with the Vevo LAZR-X
- Deep, optical signals visible with high resolution and in real-time
- Multispectral acquisition for imaging multiple components simultaneously
- Non-invasive for longitudinal studies
- Co-registration with detailed ultrasound anatomical images
- Real-time assessment of functional data such as oxygen saturation, contrast agent distribution, pharmacokinetics and more
Vevo® LAZR-X

Multi-Modal Imaging Platform

Fusion of ultrasound with nonlinear contrast, Doppler and photoacoustic modes

Customizable user interface

Ease-of-use with one-touch acquisition

User-defined workflow for high throughput

Vevo 3100
PORTABLE, CUSTOMIZABLE, TRUSTED TECHNOLOGY

Trusted Vevo technology used in hundreds of research labs

State-of-the-art ultra high frequency electronics operating up to 70 MHz

Resolution down to 30 µm

LAZR-X Cart

Dual wavelength ranges including signal (680-970 nm) and idler (1200-2000 nm)

Advanced laser technology for fast and sensitive acquisition

Small, compact, portable design
Vevo® LAZR-X

Multi-Modal Imaging for Exceptional Translational Research

**Oncology**
- Tumor detection and sizing in 2D and 3D
- Vascularity and perfusion
- Tumor model characterization
- Response to therapy
- Hypoxia

**Molecular Biology**
- Characterization of nanoparticles, dyes and other contrast agents
- Drug delivery and pharmacokinetic analysis
- Microdistribution of biomarkers
- Cell tracking

**Cardiology**
- Cardiac function in 2D, 3D and 4D
- Hypoxia and ischemia measurement
- Hemodynamics
- Myocardial and vascular strain
- Cardiotoxicity

**Neurobiology**
- Functional imaging with oxygen saturation, total hemoglobin and blood flow velocity
- Molecular imaging & cell tracking with dyes, nanoparticles or other agents
- Glioma research, Stroke assessment, Image-guided injection
- On-board neuroanatomical reference

NON-INVASIVE | REAL-TIME | LONGITUDINAL
FUSION OF ANATOMICAL, FUNCTIONAL AND MOLECULAR DATA
Vevo® LAZR-X

MX Transducers & Interchangeable Vevo Optical Fibers

The high-resolution MX linear array transducer technology can now be paired with high-efficiency fiber optics in a flexible way to optimize photoacoustic imaging for a specific application.

CUSTOMIZE DEPTH, SENSITIVITY AND RESOLUTION FOR YOUR RESEARCH
CUSTOMIZE YOUR IMAGING NEEDS IN TWO EASY STEPS

SELECT TRANSDUCER

Select an MX series transducer with Vevo Fiber Jacket suitable for the desired animal, anatomy and resolution.

SELECT VEVO OPTICAL FIBER

Select a high-efficiency Vevo Optical Fiber (3 widths available) for the desired width, depth and sensitivity of photoacoustic imaging and insert into jacket to begin imaging.

APPLICATION EXAMPLES

<table>
<thead>
<tr>
<th>Transducer</th>
<th>Frequency Range</th>
<th>Axial Resolution</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>MX201</td>
<td>10-22 MHz</td>
<td>100 µm</td>
<td>Mouse brain, rat cardio, Rat deep abdominal, rabbit superficial tumor, Mouse whole body, pig skin, subcutaneous tissue</td>
</tr>
<tr>
<td>MX250/250S</td>
<td>15-30 MHz</td>
<td>75 µm</td>
<td>Mouse deep abdominal, orthotopic rat tumor, Rat abdominal, mouse abdominal, x</td>
</tr>
<tr>
<td>MX400</td>
<td>20-46 MHz</td>
<td>50 µm</td>
<td>Orthotopic mouse tumor, mouse cardio, x, x</td>
</tr>
<tr>
<td>MX550D/550S</td>
<td>25-55 MHz</td>
<td>40 µm</td>
<td>Subcutaneous tumor, x, x</td>
</tr>
</tbody>
</table>
Vevo® LAZR-X

Powerful Quantification Tools with Vevo® LAB Software

Post-processing and quantification of imaging data including:
• Percent oxygen saturation and total hemoglobin measurement
• Spectrally unmixed data for component analysis
• Onboard graphing capabilities for pharmacokinetic analysis and 3D distribution
• Contrast quantification software for relative blood volume, blood flow and perfusion parameters
• Myocardial and vascular strain analysis
• Onboard 3D and 4D rendering capabilities including segmentation and volume measurements

Accessories

Vevo PHANTOM
• For characterization of photoacoustic contrast agents for multispectral imaging
• Spectral curves can be saved for in vivo spectral unmixing

Vevo Infusion Pump
• For automated in vivo bolus injection of drugs or contrast agents
• Quantification including graphing of time-intensity data

Vevo BRAIN
• Mouse stereotactic frame for reproducible animal positioning
• Includes high resolution ultrasound mouse brain anatomical atlas

Vevo LAZRTight Enclosure*
Vevo Imaging Station
Mouse & Rat Table
Anesthesia System

* OPTIONAL: enclosure for operation without exposure to laser light. Ideal for imaging cores and multi-use labs.
"Through **bold innovation**, we empower those dedicated to the advancement of human health." - FUJIFILM VisualSonics Purpose Statement

---

**Vevo Support**

The Vevo LAZR-X Photoacoustic Imaging Platform is accompanied by support you can count on.

**Applications Support and Training**
- Customer on-site training
- Customized hands-on education

**Technical Support**
- On-site & online support
- Scientific applications expertise

**Online Resources**
- Live and on-demand webinars
- Imaging guides and videos
- Grant support program
- Publication library
- Exclusive customer portal

For additional resources, support or service requests, visit our website visualsonics.com
The Vevo LAZR-X, associated transducers, contrast agents, and accessories are for laboratory use only, not for human use.

VisualSonics, Vevo are trademarks and registered trademarks of FUJIFILM SonoSite, Inc. in various jurisdictions.
All other trademarks are the property of their respective owners.

© 2017 FUJIFILM VisualSonics Inc. All rights reserved.

MKT02906 (Rev. 1.1)