



The next generation  
of animal eye research  
starts now.

**phoenix**  
RESEARCH LABS

# MICRON IV

## Exceptional retinal microscopy

Phoenix Research Labs' technologies are designed by scientists, for scientists, to support eye and eye-brain research using laboratory animals. They are not ad hoc adaptations of clinical instruments. Our optimization for the rodent eye leads to extraordinary performance and high quality images that enables a new era of in vivo observations. Phoenix has played a part in numerous longitudinal studies previously not possible.

### MICRON IV:

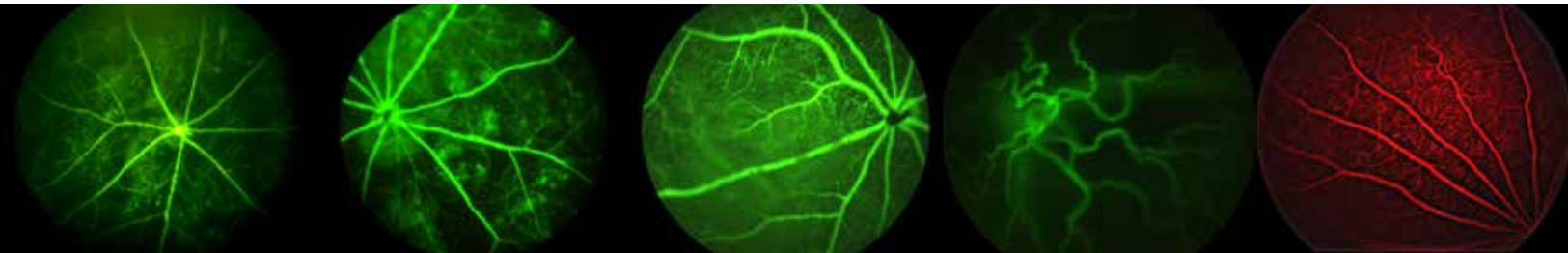
- Mouse retina resolution below 3 microns
- Fluorescein angiography with resolution to observe RBC
- Image arbitrary fluorophores
- Real-time display with capture of stills or videos
- New software, 'Discover', gives you the tools to capture the remarkable images



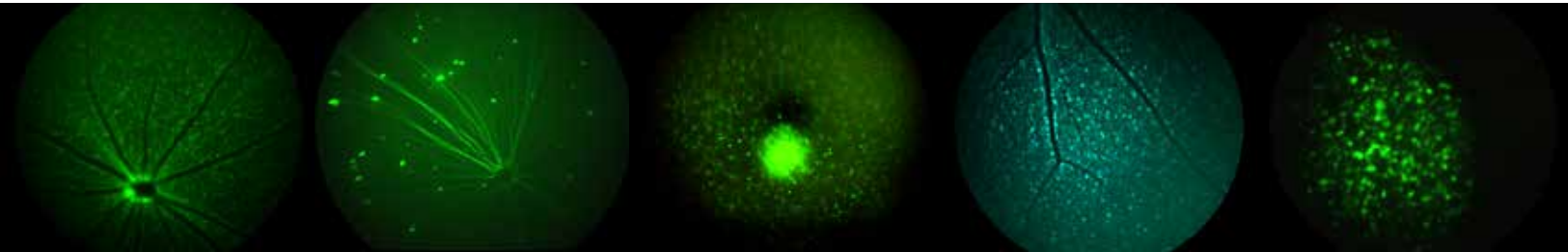
# A single device with multiple modalities



**Bright field:** Wide field of view images of mice and rat retinas with high clarity



**Angiography:** Resolves the capillary bed and observes the flow of red blood cells

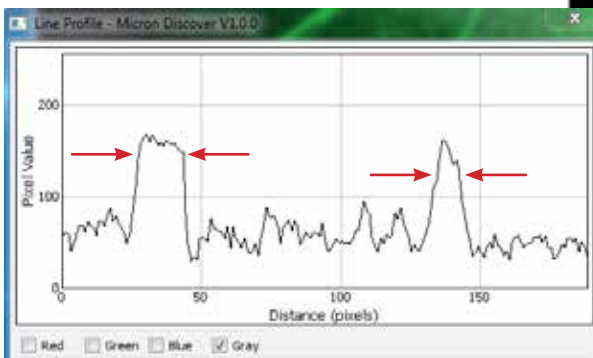
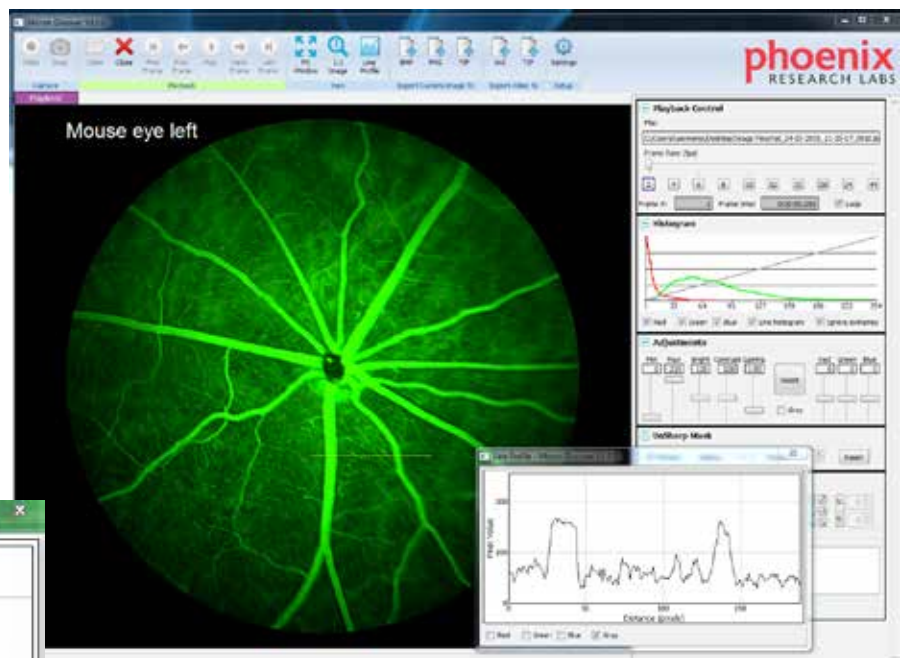


**Fluorescent Imaging:** Observe arbitrary fluorescent molecules across the visible spectrum:

## 'Discover' the advances we've made

Our new image processing software, **Discover**, extends the reach of your research with features designed to help you capture the best images possible:

- Image Processing Routines
- Contrast Stretch
- Increased Usability
- Line profiles



### MEASURE VESSEL CALIBER

Discover provides detailed line profiles to accurately measure vessels.

# OCT2

## Next-generation OCT for small animals

Phoenix Research Labs' OCT2 represents a tremendous leap forward in true image-guided OCT imaging. We've updated and improved every aspect of our already exceptional system; from improved optics in our new scan head, to dramatic performance improvements in our image processing hardware & software. We've designed to make capturing stunning OCT images easier and faster than ever before.

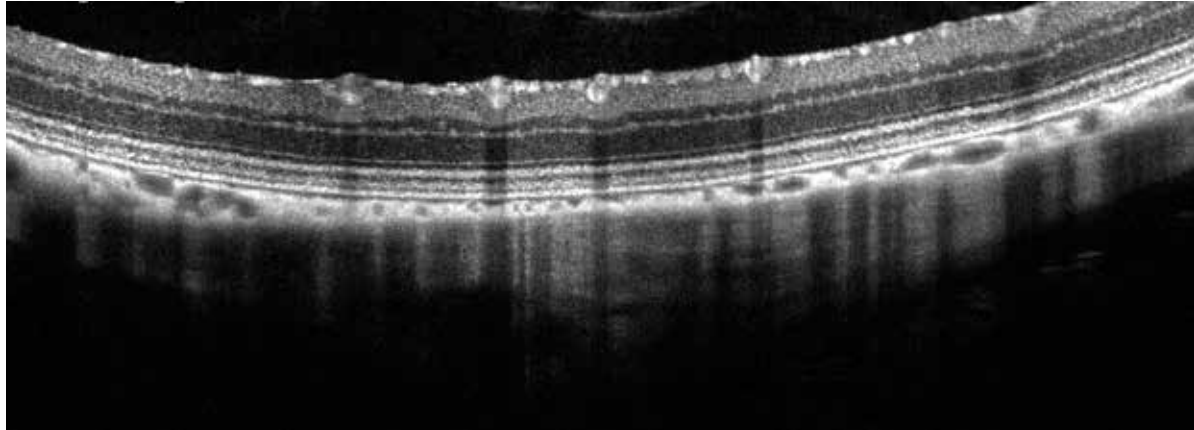
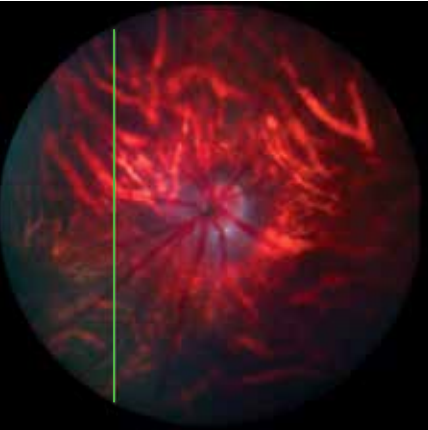
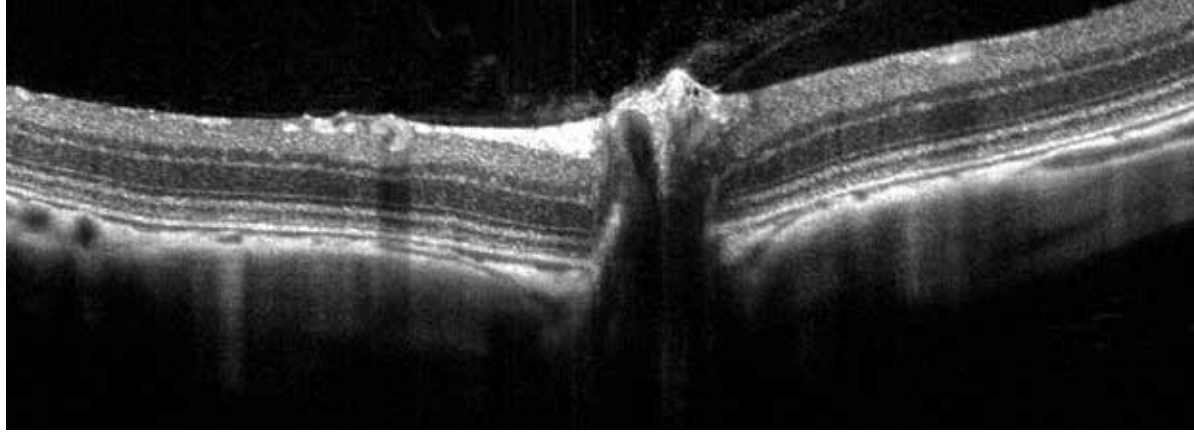
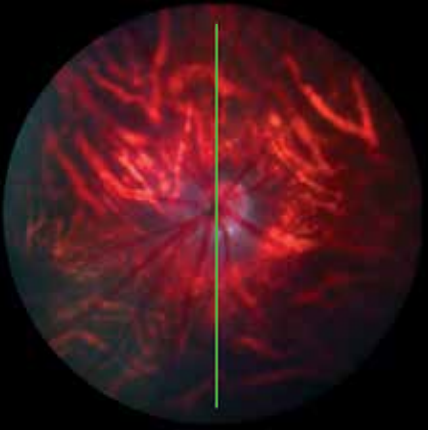
### Updated state-of-the-art performance

- Upgraded OCT engine
- Enhanced depth allows studies of sclera
- Classical OCT artifacts eliminated

### All new OCT scan head

- New OCT scan head design is more robust, easier to install and stable for clear imaging
- Improved software allows precise alignment of scan to image
- Obtain True-Image Guided OCT images in under 2 minutes

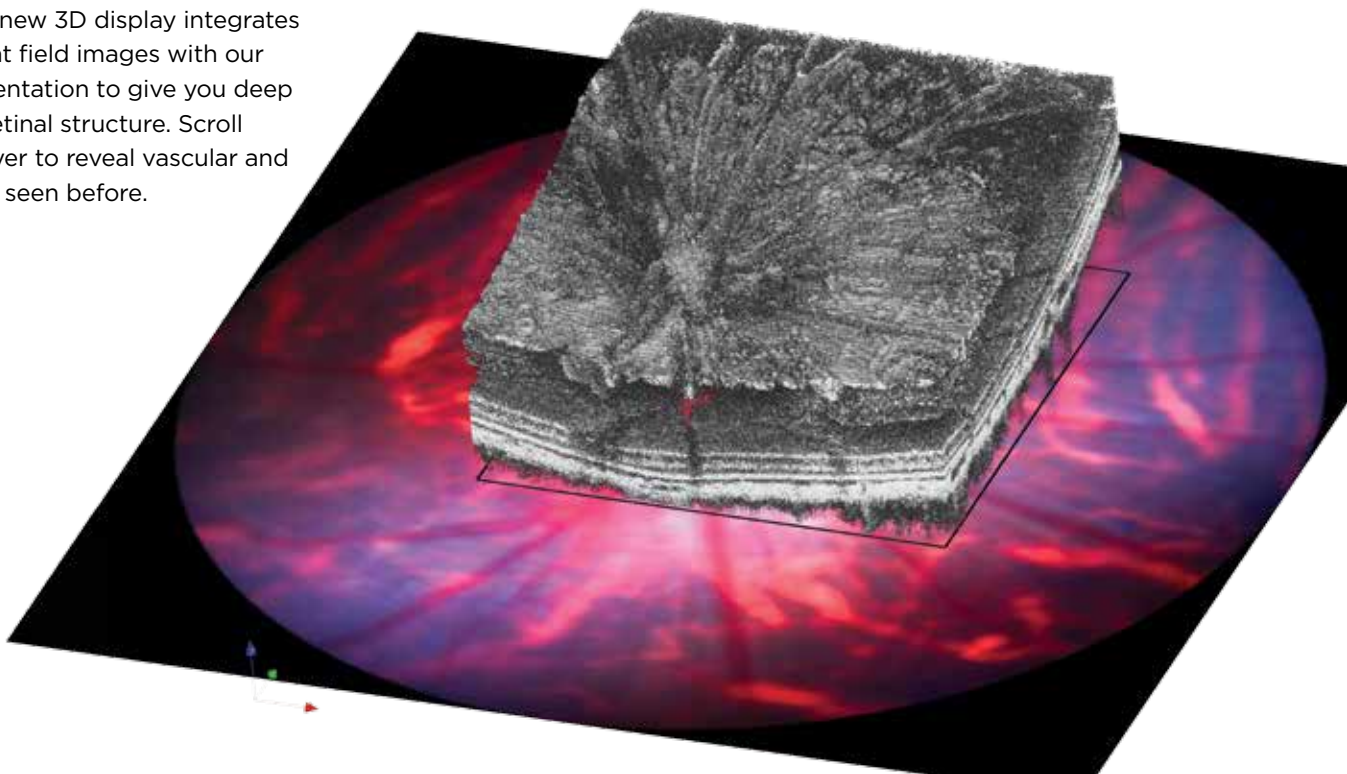




OCT scan location is presented simultaneously on a real-time Micron IV+ bright-field image. Changing the OCT scan location is as easy as moving the scan line across your image. Combining an OCT scan with fluorescein is possible with the simple turn of a filter on the Micron IV+, and can be captured during the same sedation session.

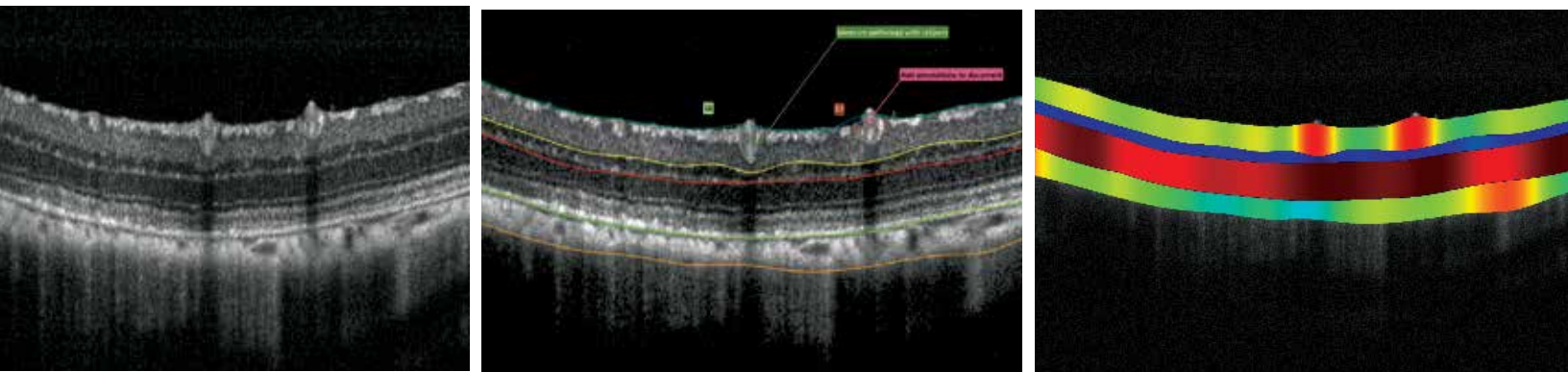
## **NEW:** Phoenix 3D display gives a new way of visualizing structures

Our revolutionary new 3D display integrates our stunning bright field images with our new 3D OCT presentation to give you deep insights into the retinal structure. Scroll through the 3D layer to reveal vascular and layer details never seen before.



# INSIGHT | Intelligent eye segmentation

Using OCT data recorded from your Phoenix Micron IV+ camera, InSight can be employed to segment the retinal layers automatically or interactively.

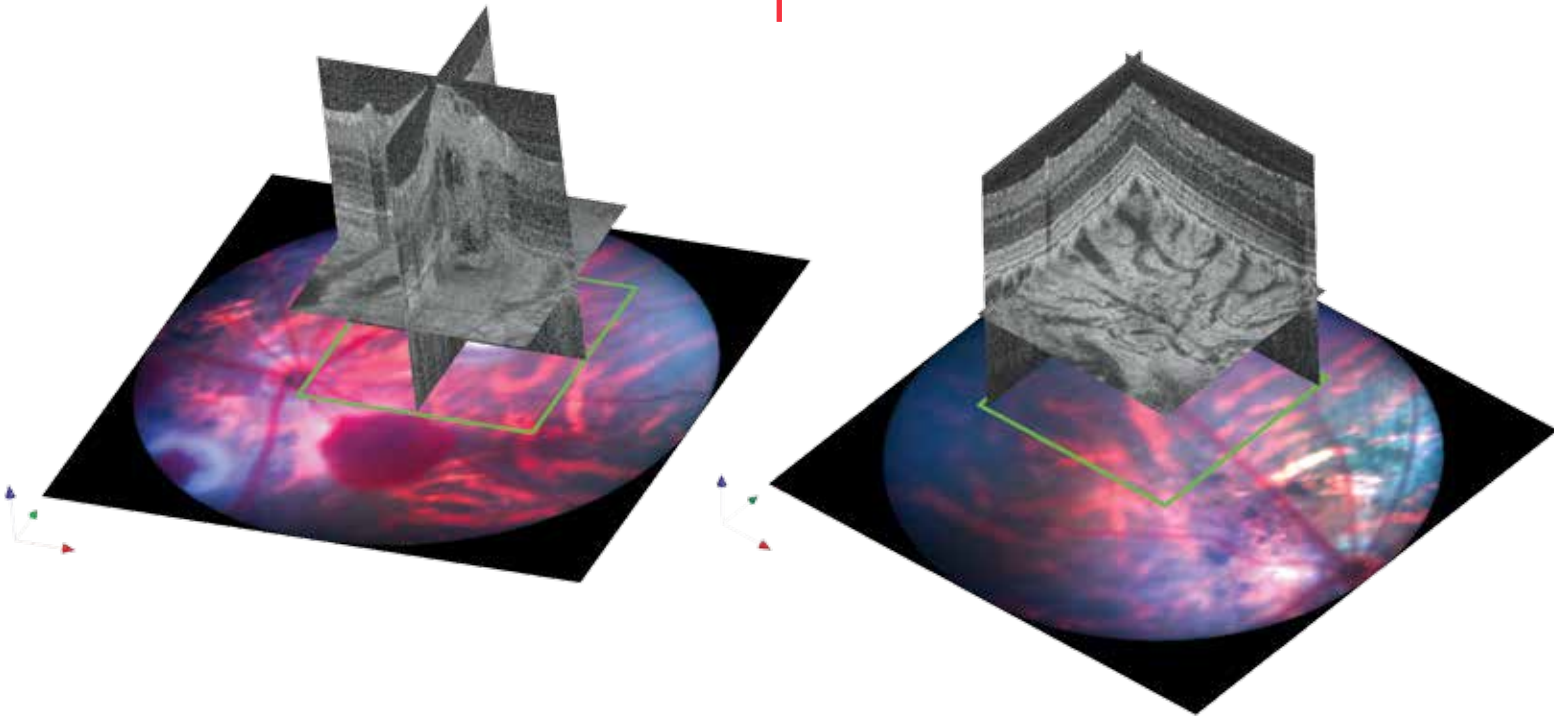


## **Automatic when you want it, control when you need it.**

InSight automatically calculates layer segments for the retina or, when the pathology is abnormal, our interactive controls let you easily adjust the segmentation in any way you choose.

# INSIGHT 3D

## Outstanding 3D visualization

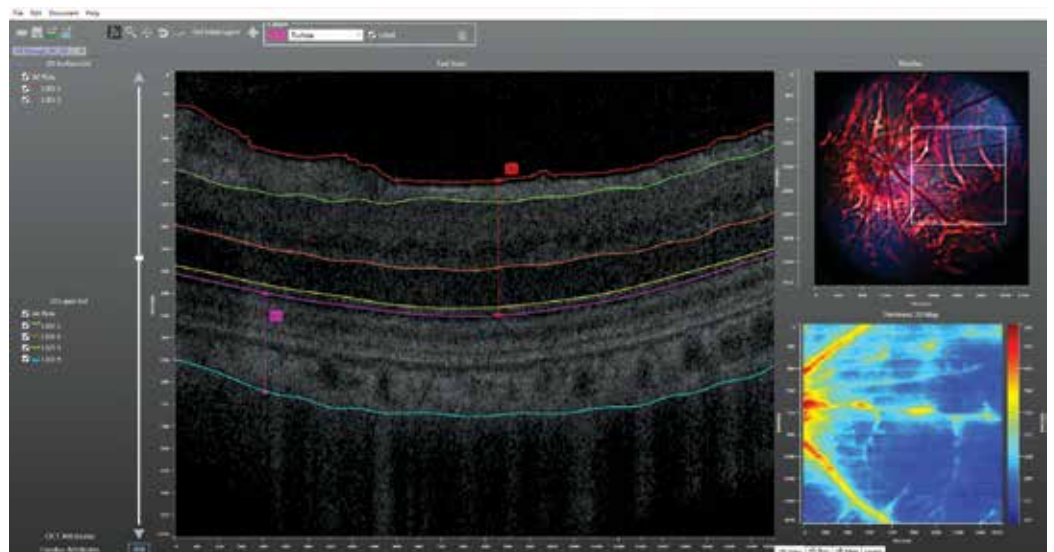


InSight 3D\* gives you the ability to select a scan area directly on your bright field image and extract a 3D OCT segmentation that you can rotate, view and scan. Our new segmentation engine will visualize layers like you have never seen before.

### InSight 3D segmentation

InSight 3D segmentation will provide global insights into layers and other retinal anomalies.

Release is scheduled for summer 2015 and will include heat maps and other 3D analysis tools.



# A complete imaging system for eye research

A powerful set of modalities brought to your research program and in a physically compact format. This bench-top system can be acquired as a retinal imager alone, or with our powerful compact OCT2. Taken together or alone, no floor space is needed, releasing limited lab floor space to better serve your needs.



## Specifications:

### MicronIV+ Retinal Microscope

Transverse resolution	3 microns (mice)
Pixel size on retina	2 microns (mice)
Imaging modes	Bright field Fluorescein and Evan's blue angiography Four position filter wheel for selection of arbitrary fluorophores for fluorescent studies
Dynamic imaging rate	20 frames per second to 0.5 frames per second
Imaging dynamic range	60 dB
Image sensor	Custom built 3CCD with extended sensitivity in the NIR
Field of view	50 degrees
Data export	All common image and video formats

### Optical Coherence Tomography

Longitudinal resolution in tissue	1.8 microns
Imaging depth	1.4 mm
Scan rate	20,000 line per sec
Frame averaging with correlate and add	Up to 50 frames
Transverse scan length in mice	250 to 1,200 microns (mice)
Export formats	All common image formats