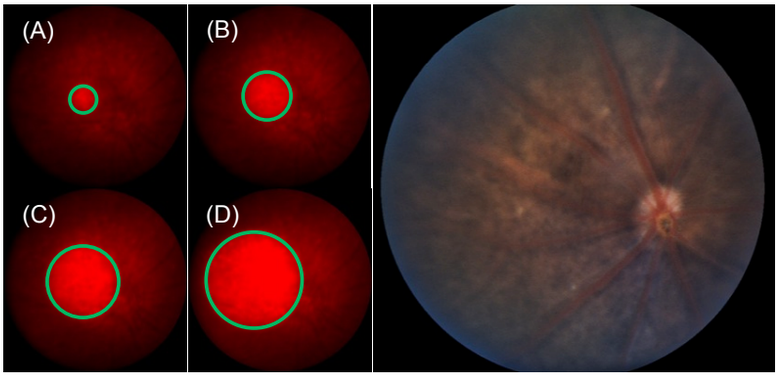
phoenix | MICRON® Focal ERG

Regional assessment using deep-red light for image-guided targeted study



Spot size: (A) 0.25 mm, (B) 0.5 mm, (C) 0.75 mm, and (D) 1.0 mm

Bright Field

Image-Guided using 650 nm light keeps dark adaptation

The Phoenix MICRON generation II Image-Guided Focal ERG is optimized for use with mice and rats. The unique design utilizes the new near-infrared (NIR) imaging capability of the Phoenix MICRON IV to precisely select a location for focal testing. Testing selected specific region is valuable to differentiate segments of retina functionality. Such a capability is ideal for investigating retinal response where therapy is provided on a regional basis. The Phoenix MICRON Image-Guided Focal ERG Generation II attaches to the Phoenix MICRON IV and uses its imaging capability.

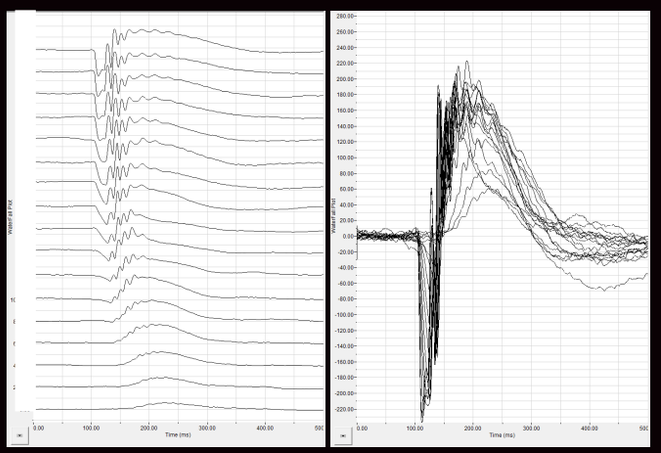
Controlling stimulus and reception

A low-noise microprocessor-based control system provides for illumination and reception through an easy to use software interface. The LED light sources deliver energy densities from well above the ISCEV high standard of 100 Cd sec/m^2 to well below the base standard of 0.01 Cd sec/^2. A sophisticated software-based system provides for illumination control over six orders of magnitude and pulse length control from 0.2 msec to minutes, to set backgrounds, or deliver “flicker”.

Unique electrode system

The Image-Guided Focal ERG design features a corneal electrode integrated into a gold-tipped ring at the end of the objective lens which couples with the small animal eye. Stimulus targeting is done under guidance from deep red illumination. The animal eye couples to the objective lens/electrode, providing stability and ensuring it will remain in place.

Waterfalls with 3dB increments using 1.5 mm spot diameter on mouse



Advanced signal processing capability to extract and display OP signals

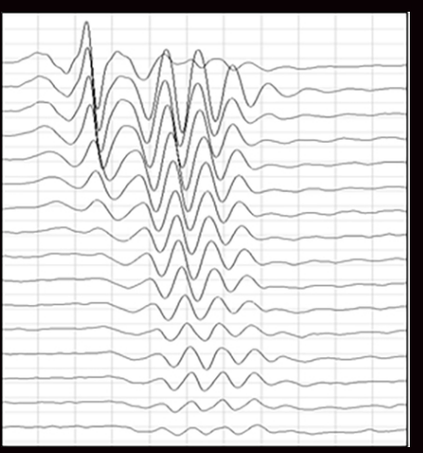


Image-Guided Focal ERG for rodents

- Attaches to the Phoenix MICRON IV camera
- Deep Red guidance keeps animal totally dark adapted
- Built-in electrodes - no more small contact placement in a dark lab

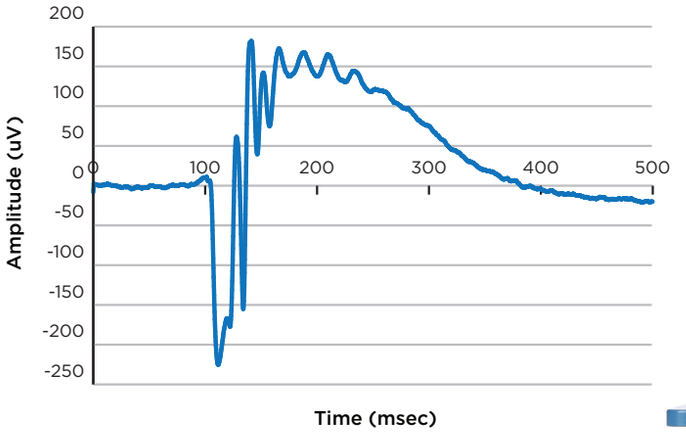


Image-Guided Focal ERG

Stimuli	White light LED	
Illumination size in diameter	Mouse: 0.25mm, 0.5mm, 0.75mm, 1.0mm, 1.5mm Doubled for rat Micrometer driven targeting	
Range of stimulation in log cd sec/m^2	-1.7 to 3.1 Set levels over a range of 10^6	
Modes	Single flash Double/Flicker flash Continuous background with flash	Light adaptation Chart mode
Pulse length	0.2 millisecond to minutes	
Objective lenses	Objective lens for mouse and rat sold separately	
Camera	Integrated with Phoenix Micron IV (sold separated)	
Heater	Maintains 37 degrees Celsius for Mouse and Rat	
Retinal Targeting	Illuminate retina for alignment at 700nm	
Software & Controls for Acquisition and Analysis	**Acquisition**: CLEAN* mode to remove 60/50 pickup noise Controllable Bandwidth Controllable digitization sampling rate Controllable scan and display time Controllable all parameters of LEDs (Delay, pulse length etc..)	**Analysis**: Automatic measurement of A and B wave peaks Automatic display of waterfalls Automatic measurement of OP peaks and implicit time Averaging with user selection
Animal stage	5 planes of adjustment	
Electrodes	Corneal contact (gold-plate objective lens) Platinum needles for tail (ground) and head (reference)	

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