



# Galvo Miniscanner



## Fast FRAP and Photoactivation

The Galvo Miniscanner is an ideal accessory for a Ti-E inverted microscope imaging system requiring flexible region-of-interest stimulation experiments. Utilizing a pair of fast scanning mirrors, near-diffraction limit laser light can be rastered at high speed at the specimen plane to accomplish a variety of stimulation experiments. Easy setup and high performance make the Galvo Miniscanner a great option for confocal or widefield imaging applications.

### Fast Scanning

The miniscanner drives at over 1KHz to insure fast rastering of user-defined shapes, supporting up to 25 stimulation ROIs (regions-of-interest) in a field-of-view, including complex polygons.

### Line and Point Stimulation

With appropriate laser hardware, draw lines for ablation or stimulate multiple spots in a field of view.

### Easy Calibration

Simple 3 point calibration routine insures high precision and accuracy with the objective lens, detector, and experiment setup you choose.

### Acquire Images while bleaching or stimulating

Coupled with the Stage-up configuration of the Ti-E inverted microscope, you can use the miniscanner and acquire images simultaneously with no delay between pre- and post- stimulation imaging.

### Up to 3 Stimulation Groups

Up to 3 different stimulation groups can be defined, each utilizing a different pixel dwell time.

### Live Point or ROI stimulation

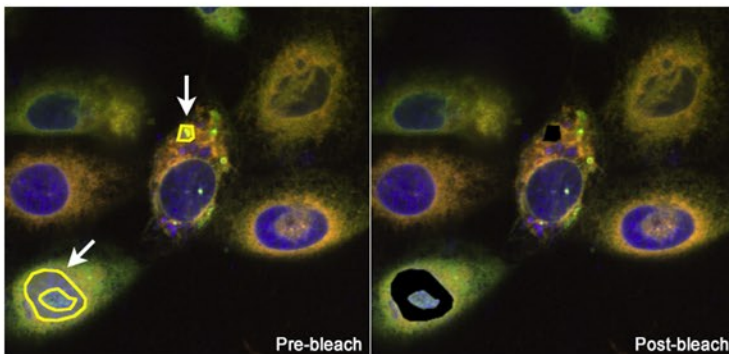
Stimulate a point or region-of-interest "live", or in an experiment with predefined frequency and duration.

### Easy Upgrade Path

Ti-E microscope users can add a stage-up kit and retrofit the miniscanner to existing microscope stands. The miniscanner also compliments the Agilent MLC400B dual fiber laser launch perfectly for fast sequential imaging and stimulation through 2 output fibers.

### Compatible with all imaging modalities

The miniscanner is a versatile tool that can be combined with point scanners, field scanners, or widefield imaging systems.



To learn more about the Galvo Miniscanner, contact your local Nikon representative, call 1-800-52-NIKON, or email [nikoninstruments@nikon.net](mailto:nikoninstruments@nikon.net) or visit [www.nikoninstruments.com](http://www.nikoninstruments.com)

# Specifications

## Galvo Miniscanner



### Hardware

3mm galvo mirrors (2)

Mirror control via NIDAQ analog voltage input (-3 to 3V typical)

Attaches to Ti-E inverted microscope stand via stage up kit MED53200 and rear port adapter MEB58100

Requires dichroic mirror in Ti-E filter turret (specifications vary with experiment needs)

A table mounting kit is required to support the scanner on the Ti-E rear port

### Laser Input

Single mode APC (angled) FC connected optical fiber

Hardware supports 365-700nm, Class IIIB recommended

Recommended laser unit: Nikon LUnA or Agilent MLC400 series

### Performance

Typical operating frequency up to 1KHz (maximum frequency 15KHz)

Near diffraction-limit spot size with appropriate single mode fiber

11mm diagonal FOV through Ti-E rear port

Laser dwell time maintained by AOTF blanking and galvo speed

Supports point, line, polyline, and region-of-interest for laser stimulation/bleaching

Can be used simultaneously while imaging with appropriate dichroic mirrors

### Software

NIS-Elements Advanced Research (Ar) or Confocal (C) required

XY Galvo Scanner module required

