

# UGA-42 GEO

## Selectable Spot Shape System for Photomanipulation

The UGA-42 GEO is a programmable illumination system designed for illumination of various, predefined shapes without scanning. Similar to the UGA-42 Firefly, the positioning of the different shapes in the field of view is done by fast galvanometer scanners.



### APPLICATIONS

*Optogenetics*  
*Neural Mapping*  
*Photostimulation*  
*Photobleaching / FRAP*  
*Photoactivation*  
*Photoswitching*  
*Photoconversion*  
*Photolysis / Uncaging*  
*Temperature Jump*

### FEATURES

Integrated, add-on photomanipulation system

Programmable, computer-controlled illumination using light spots of various shapes and sizes

Real-time photomanipulation in "click & fire" mode

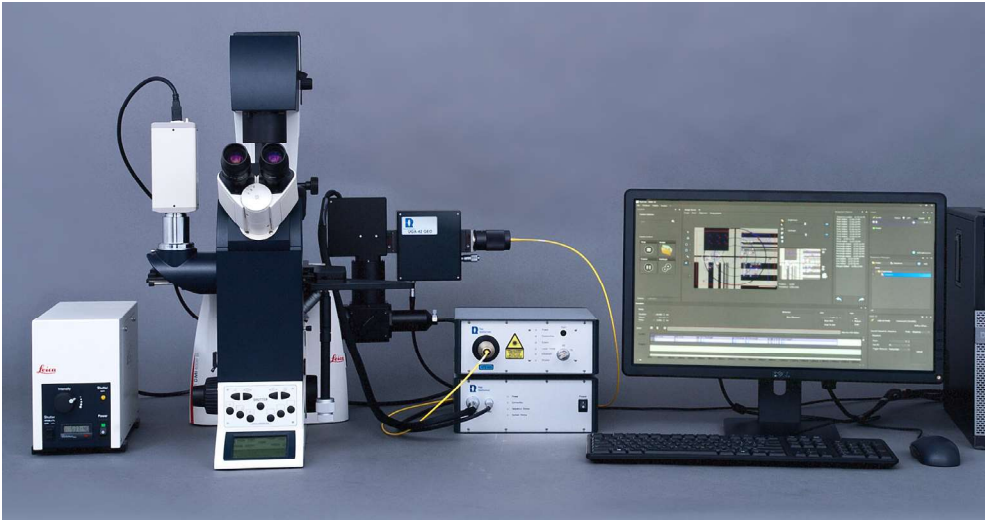
Sequential illumination of points and regions of interest in "sequence" mode

Precise, user-defined spatiotemporal control

Simultaneous photomanipulation and image acquisition

Digital & analog modulation of Rapp or 3rd party laser systems (if supported by the laser)

Up to four lasers independently controlled in one experiment



## SYSCON-SOFTWARE

Runs independently of and in parallel with 3rd party software (e.g. imaging, electrophysiology)

Communication protocols for Metamorph, ZEN Blue/2/Black, Nikon Elements,  $\mu$ Manager

Control of multiple lasers within the same experiment

- Digital & analog modulation for Rapp and 3rd party laser systems (if supported by the laser)

“Click & Fire” mode

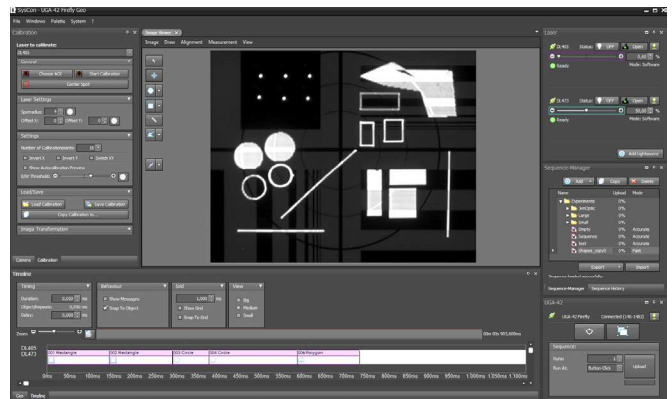
- Real time photomanipulation
- Spots & user-defined ROIs are illuminated at the click of the mouse
- User-defined exposure times

“Sequence” mode

- Programmable sequential illumination of multiple locations
- User-defined ROIs
- User-friendly ROI and timeline editor

In/Out TTL-triggers for synchronization

- Manual or TTL-triggered sequence start
- Separate triggers for single events within the sequence
- User-defined TTL-outputs to control other devices



## UGA-42 GEO vs. UGA-42 Firefly

