



# OptoPatcher System

## LSD-1, Light Stimulation Device

Optogenetics is becoming an increasingly important research method in the neuroscience community. **ALA Scientific's Light Stimulation Device (LSD-1)**, can be incorporated into existing electrophysiology setups where light sensitive ion channels are being studied. Optical stimulation over standard electrical stimulation techniques affords researchers the advantage of non-invasively stimulating targeted areas.

### Key features of the LSD-1 include:

- LED intensity control via manual knob or via analog signal for computer control
- Changeable LED for different wavelength use
- Low-noise electronics for integration into electrophysiology setups
- Field illumination when light guide connected to microscope optics
- No warm-up period needed
- OptoPatcher fiber optic connection option for use with OptoPatcher electrode holder



Wavelengths (nm)	Color	*These are the wavelengths available at this time due to the LED manufacturer in a state of flux with regard to power and light output. New wavelengths will be listed as they become available.
465	Blue	
520	Green	
624	Amber	

### Specifications

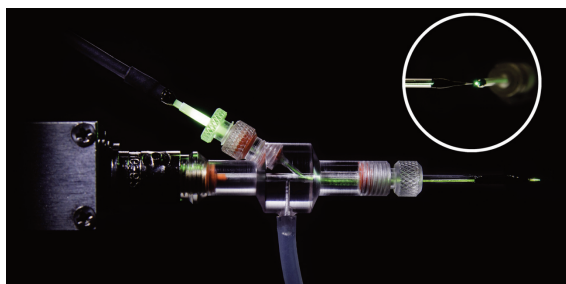
Controller Power	4.6"/11.6cm x 3.6"/9.5cm x 2.25"/57.3cm; 0.8lbs/0.36kg/ 6VDC/2A
Analog voltage input	0 – 5 VDC
Intensity control	Manual control via knob or analog input 2 to 5V via BNC

## Optopatcher, Micropipette Holder

The Optopatcher is a new micropipette holder with integrated optical fiber to allow simultaneous patch-clamp recording and optogenetic activation. The design eliminates the need for a separate manipulator for optical stimulation.

When combined with ALA's LSD-1 Light Stimulator Device a complete economical optogenetics system is formed.

The optopatcher is available with the most common connectors used on patch clamps.



### Specifications

Controller	13.2 x 9.4 x 8.1 cm (5.20 x 3.7 x 3.2 in)/0.36 kg (0.8 Lbs.)
Power	6 VDC @ 2.5 A
Analog voltage input	0 – 5 VDC
Light Guide	300-560nm, 0.12in Core, 1.6in bend radius, 39.4in length
Intensity control	Manual control via knob or analog input 2 to 5V via BNC

### Ordering Information

LSD-1	One channel light stimulating device using high power LED w/3mm light pipe adapter- specify wavelength when ordering.
LSD-LED-XXX	Replacement LED module for LSD-1, includes heat sink, LED, PCB and connectors. XXX is specified wavelength
LSD-LG	3mm Standard liquid light guide
LSD-LG-Opto	OptoPatch light guide without light guide ferrule and set screw holder to LSD-1
LSD-Opto-Adapt-Set	200um light guide ferrule and set screw holder to adapt LSD-1 to OptoPatcher
OPTOPATCHER-AXU	Fiber optic light guide electrode holder for Axon Universal headstages, specify glass OD
OPTOPATCHER-BNC	Fiber optic light guide electrode holder for Heka, np1 and all BNC type headstages, specify glass OD

