



LSD-1

Optopatcher

Light Stimulation Device

Micropipette Holder

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

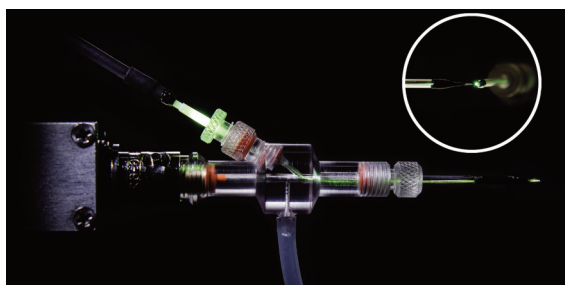
| | |
|----------------------|--|
| Controller Power | 4.6"/11.6cm x 3.6"/90.5cm x 2.25"/57.3cm; 0.8lbs/0.36kg/ 6VDC/2A |
| Analog voltage input | 0 – 5 VDC |
| Intensity control | Manual control via knob or analog input 2 to 5V via BNC |

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, npj and all BNC type headstages, specify glass OD |

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