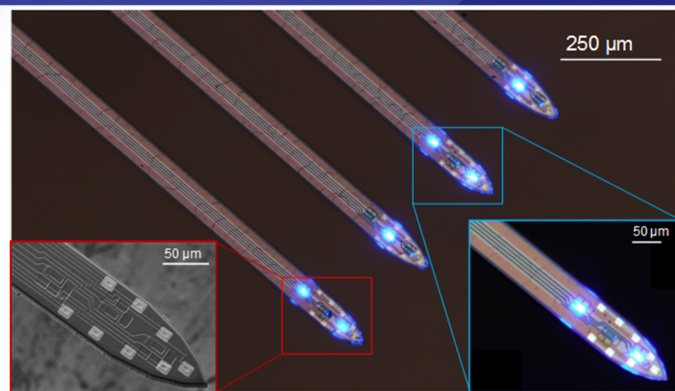


NeuroLight Optoelectrode

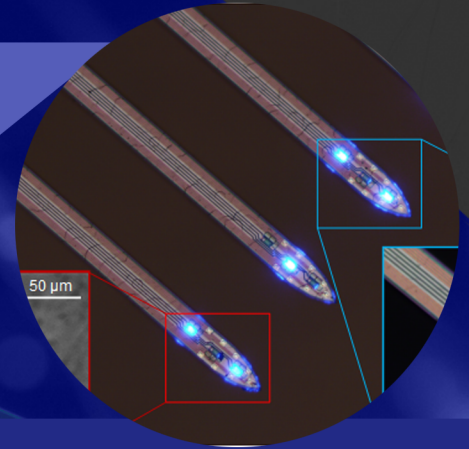


Plexon Inc and NeuroLight Technologies

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NeuroLight Optoelectrode

Plexon Inc and NeuroLight Technologies LLC have partnered to offer the NeuroLight Optoelectrode, a customizable electrode capable of optogenetic-control of local neural circuits in awake, behaving studies; square-wave excitation for precise timing control, sine-wave excitation for graded modulation, and chronic optogenetics where a microdrive is used for fine-tune positioning.



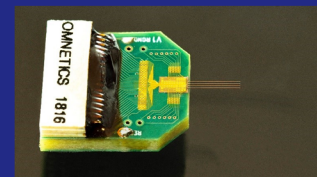
Technical Specifications

- 12 μ LEDs, 10 x 15 μ m each, 3 per shank
- Emission Peak λ = 460 nm and FWHM = 40 nm
- Typical irradiance of 33mW/mm² (@ max operating current of 100 μ A)
- 32 recording channels, 8 per shank
 - Electrode impedance of 1000 – 1500 k Ω at 1 kHz
 - Noise floor \leq 5 μ Vrms
- < 50 μ Vpk-pk stimulation artifact
- 5 mm shank length
- 2g total weight
- 40 μ m spacing between recording sites on the same shank
- 60 μ m spacing between LEDs on the same shank
- 250 μ m spacing between shank

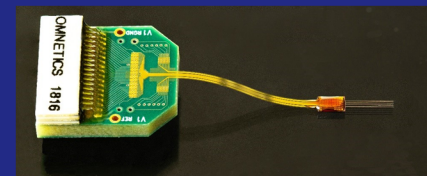
Description

These optoelectrodes have recording sites and precisely defined μ LEDs (10 x 15 μ m), allowing for simultaneous recording and local optogenetic stimulation. For chronic experiments, the electrode features an extremely durable, yet flexible cable allowing for light-weight stereotactic head fixtures.

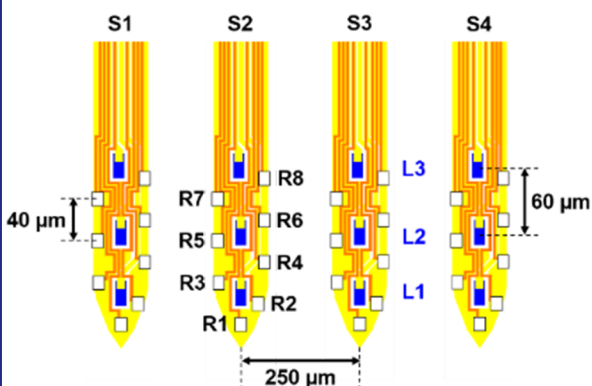
Acute



Chronic



Optoelectrode tip top view



PCB rear view

NC	S4R5	S4R1	S4R4	S4R8	S3R5	S3R1	S3R4	S3R8	S2R7	S2R3	S2R2	S2R6	S1R7	S1R3	S1R2	S1R6	GND
GND	S4R7	S4R3	S4R2	S4R6	S3R7	S3R3	S3R2	S3R6	S2R5	S2R1	S2R4	S2R8	S1R5	S1R1	S1R4	S1R8	REF

