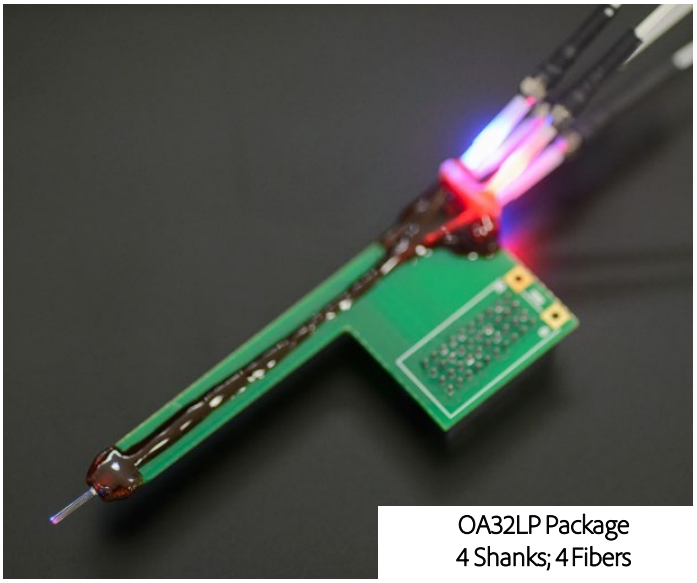
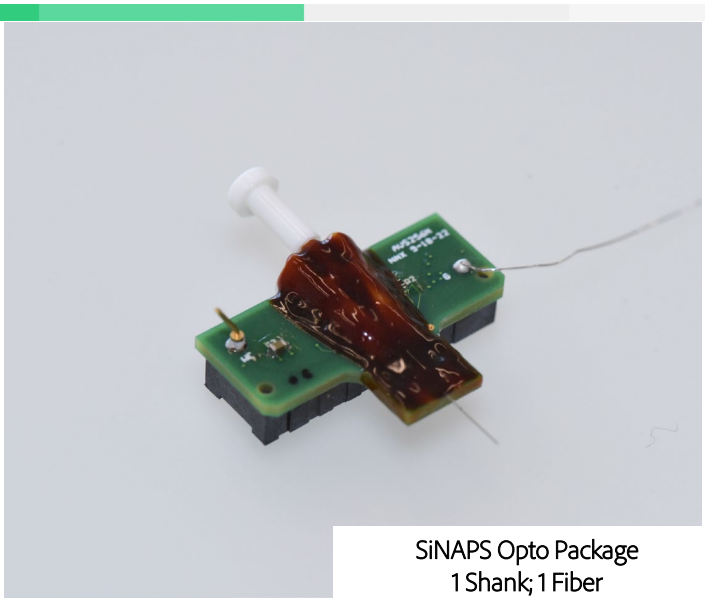
NeuroNexus

Optoelectrodes



OA32LP Package
4 Shanks; 4 Fibers



SiNAPS Opto Package
1 Shank; 1 Fiber

NeuroNexus optoelectrodes enable concurrent optogenetic stimulation and high-resolution electrophysiology.

Advantages

A powerful tool

- Optical fibers are laminated onto silicon probes to create an optoelectrode.
- Utilize a single fiber or configure multiple fibers on a single probe (one fiber per electrode shank) to activate different opsins or target different brain areas.

Many options

- Utilize any electrode array design
- Select from multiple fiber types (and specify their termination locations on each shank) to create your ideal optoelectrode

Controlled artifact

- NeuroNexus optoelectrodes are engineered for minimal photoelectric artifacts.

Specifications (Flat Fiber)

Fibers (ID/OD - NA)	50µm/62.5µm, 105µm/125µm, 200µm/220µm - 0.22NA 200µm/225µm, 400µm/425µm - 0.39NA 50µm/62.5µm, 105µm/125µm, 200µm/220µm - 0.66NA
Weight (Coupler)	< 0.5 g
Durability	< 5% transmission variability after 40 connections
Rotation Test	< 2% variation over 1 rotation
Connection Strength	> 300 g before latch separation (typical) 900 g
Max. Shear Force	(applied to top of female coupler)
Length	Tolerance ± 500 µm

5200 S. State Street, Suite 200, Ann Arbor, MI, 48108 | neuronexus.com | Phone: +1.734.913.8858 | Email: sales@neuronexus.com

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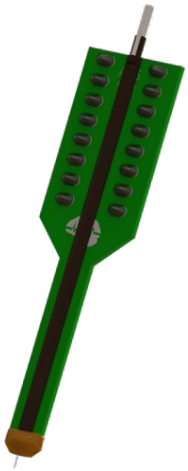
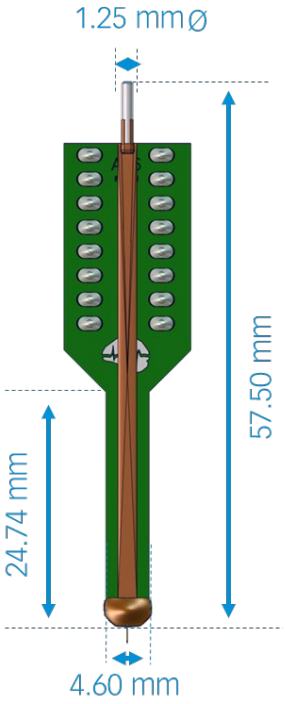
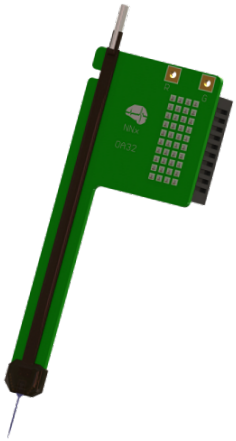
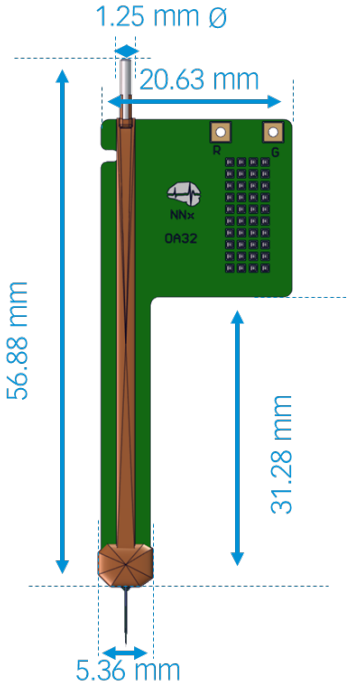
OA16LP





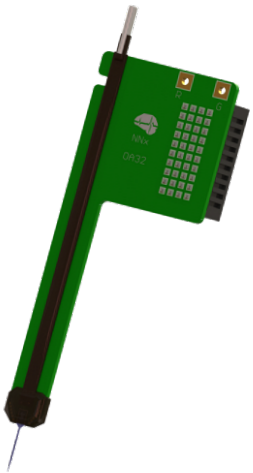
OA32LP

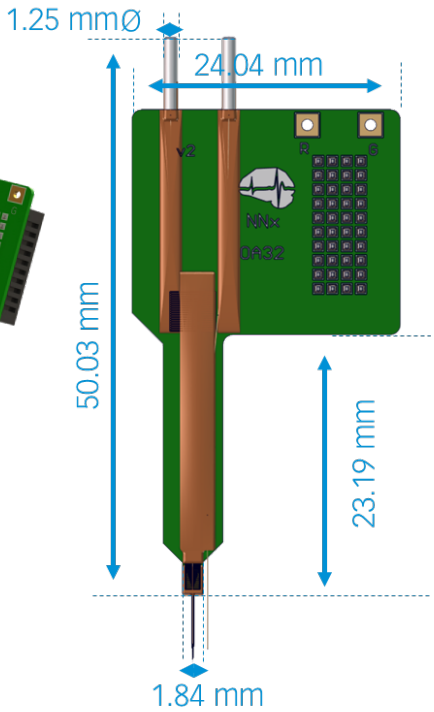




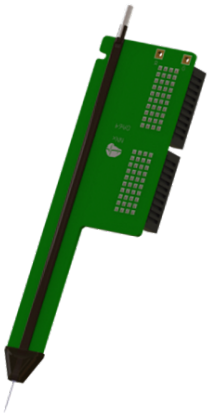
OA32LP_V2

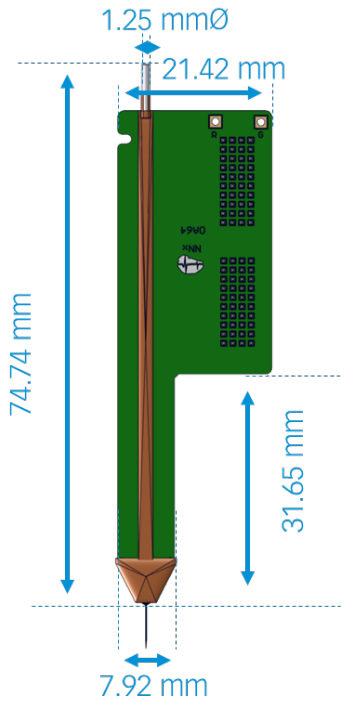
- Spacing between Ferrules may vary
- Up to 4 fiber





OA64LP





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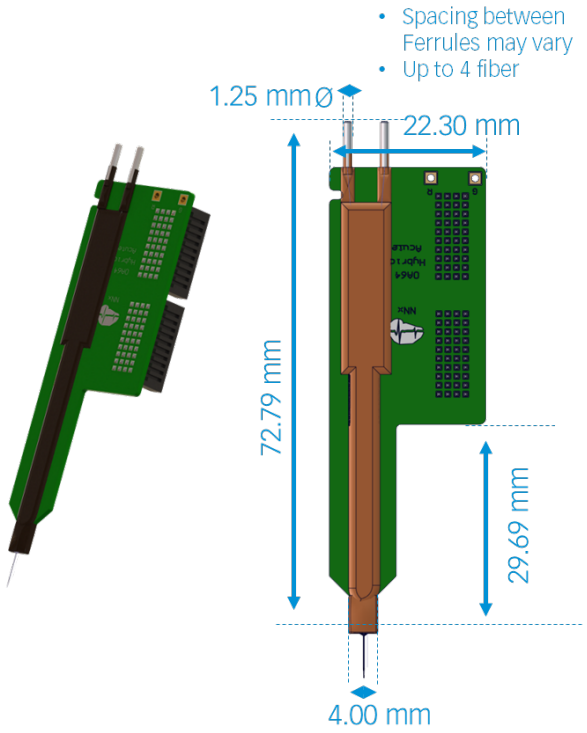
OA64LP_V2



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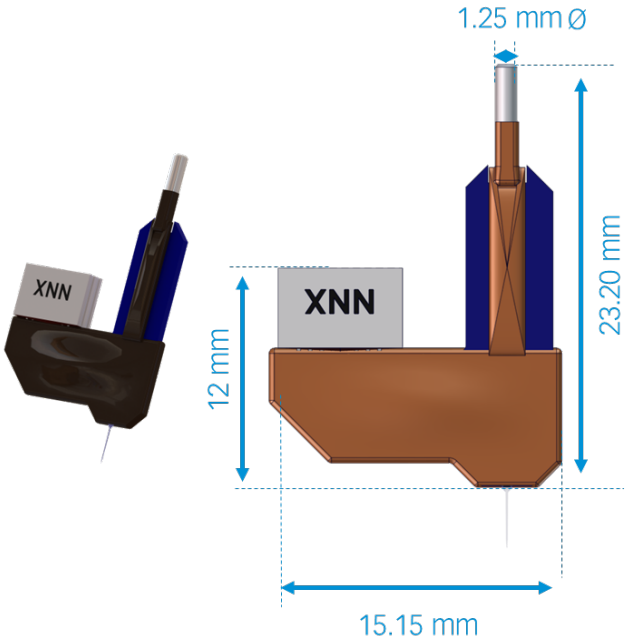

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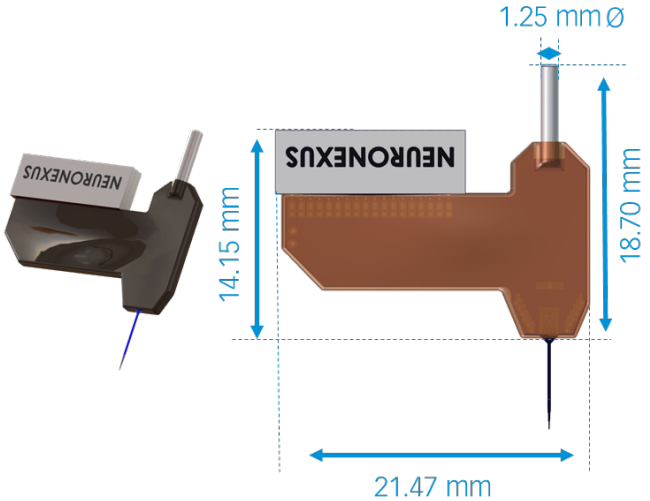
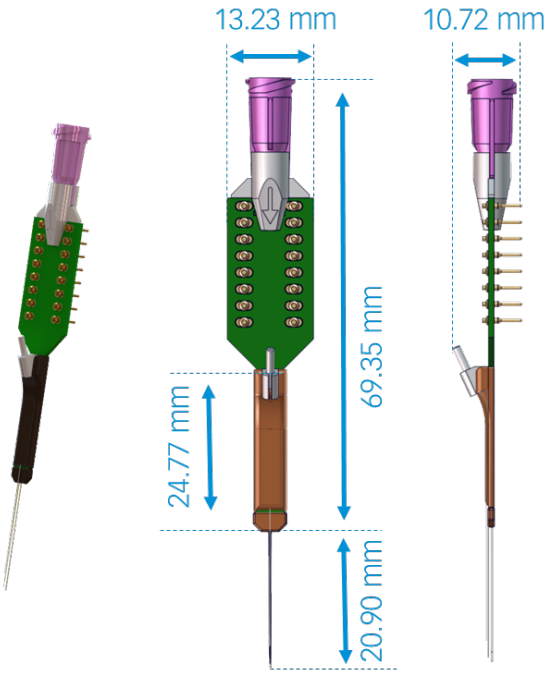


OD16LP



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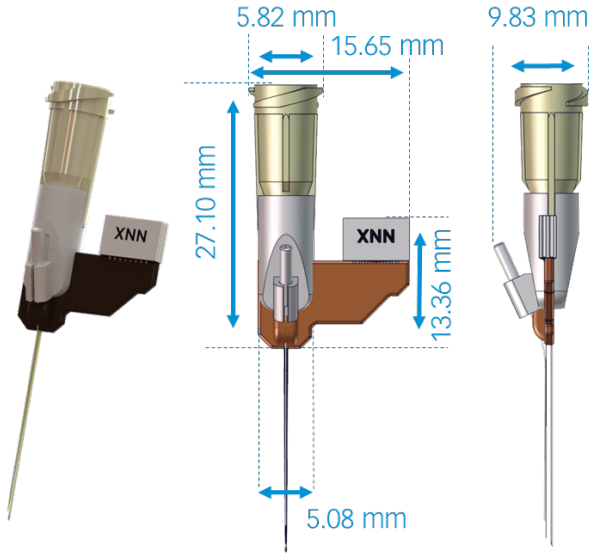
ODM16LP



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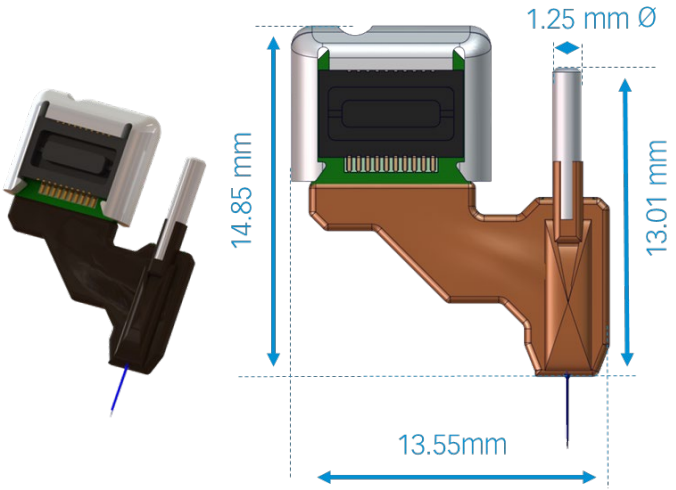

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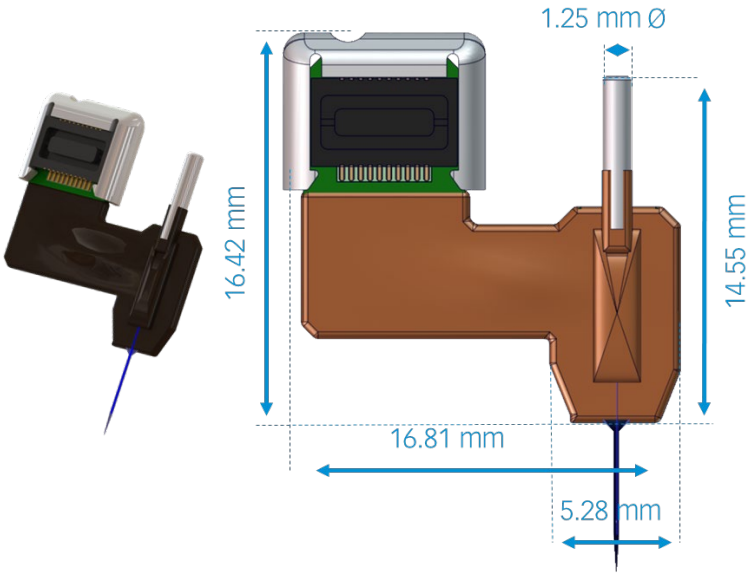
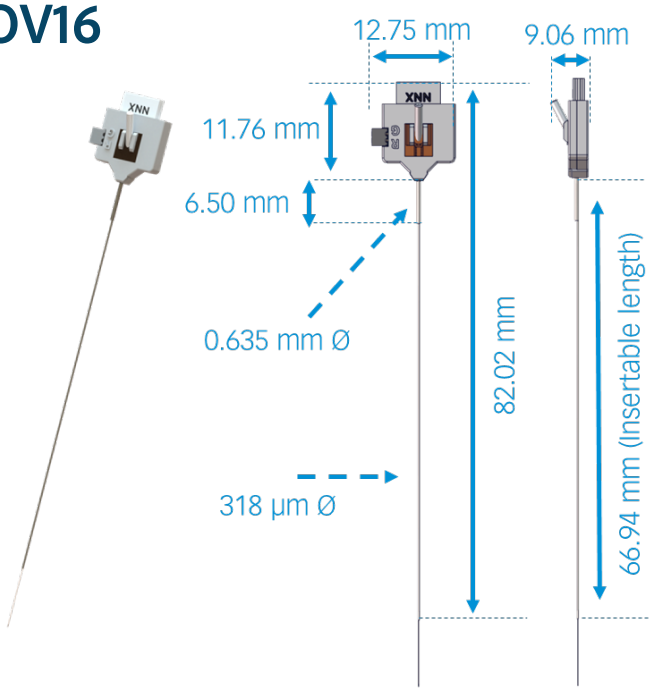


OV16



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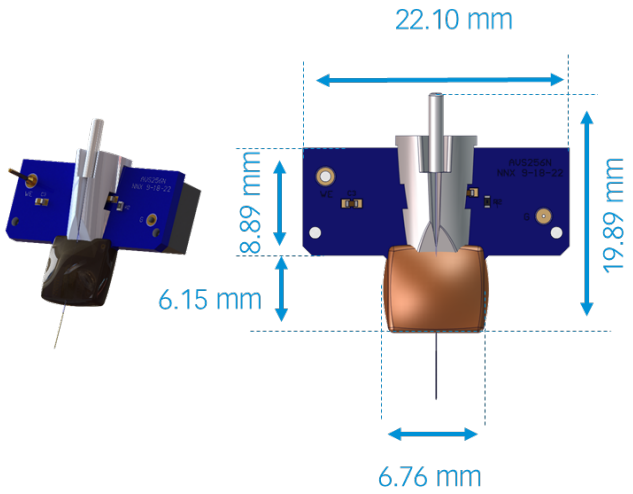
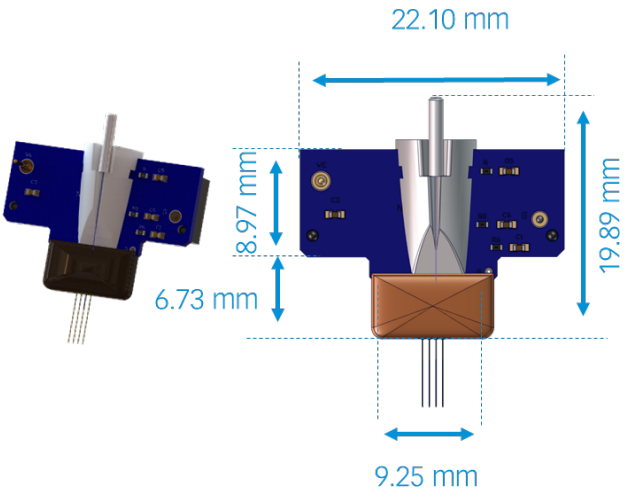
NeuroNexus
Optoelectrodes

OAVS256



OAVS1024



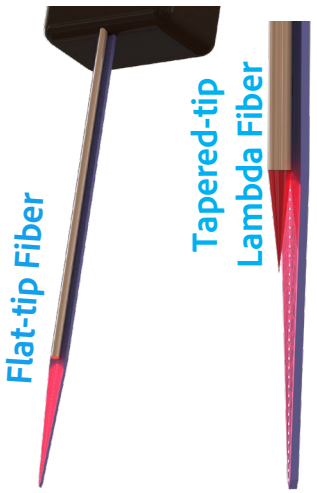
Fiber Placement Options

Single-Fiber

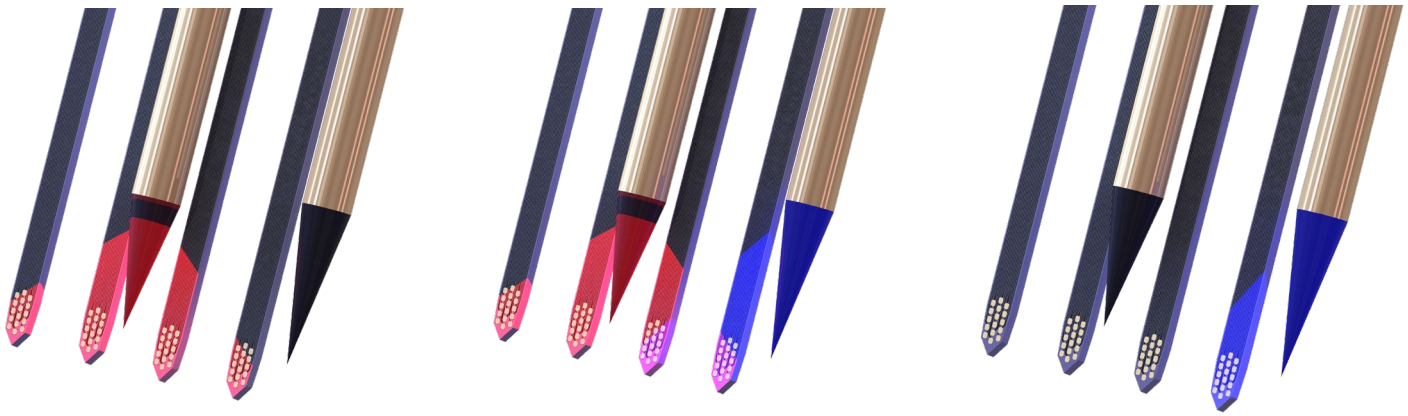
Standard passive or active microelectrode arrays can be configured as an Optoelectrode. An optical fiber (flat or tapered) is placed on the recording side of the shank and terminates at your desired location above the proximal recording site, to 50 µm accuracy.

Multi-Fiber

Multi-shank microelectrode arrays can be configured as optoelectrodes, although they have limitations on fiber placement. Only one fiber per shank can be configured, either directly over the shank or placed in between them.



Tapered-tip Fiber Placement and Illumination Options



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