

# μFAB-3D

OPEN 3D-MICROFABRICATION PLATFORM BASED ON THE TWO-PHOTON POLYMERIZATION TECHNOLOGY

Metamaterials

Microfluidics

Microrobotics

Scaffolds for cell culture

Micro-optics & photonics

Micromechanics

Medical micro-devices

✦ **μFAB-3D is an ultra-high resolution 3D-printing system, based on two-photon-polymerization direct laser writing. Compatible with a wide range of polymers, including biocompatible materials, medical grade resins and biomaterials.**

✦ **Our system helps to produce any 3D shapes with unprecedented complexity at sub-micron resolution.**



## KEY FEATURES



**> 3D-Print at the highest resolution**  
Print down to 200 nm-wide features.



**> A reliable technology**  
Achieve the highest performance with a compact, flexible and long-lasting industrial laser (no need for yearly maintenance).



**> Print the most complex structures**  
Take advantage of an unique "real 3D printing" strategy thanks to our dedicated software.



**> Adaptive resolution**  
Adapt the resolution during the fabrication. Use a big voxel to print faster, and a small one for the complex features.



**> Align and print on optical fibers**  
Align and print on structured substrates, or on the tip of optical fibers of various dimensions.



**> Upgrade from Standard to Advanced**  
Tight budget? No problem. Start with μFAB-3D Standard, upgrade easily to μFAB-3D Advanced later on.

10 μm

## > MICROFABRICATION SYSTEM

Writing resolution, in the plane (XY) (voxel diameter)	Adjustable <b>from 0.2 to 3 microns</b>
Writing resolution, vertically (Z) (voxel height)	Adjustable from <b>0.6 to 10 microns</b>
XYZ high-resolution writing-range (without stitching)	<b>100 to 300 microns</b>
Stitching & replication area (X,Y)	<b>100 x 75 mm<sup>2</sup></b>
Maximum object height (Z)	<b>Up to 20 mm</b> (with long-range Z option)
Surface roughness	<b>Down to 20 nm</b> (with anti-vibration bench)
Writing speed	<b>100 µm/s</b> at high resolution <b>5 mm/s</b> at lower resolution
Laser wavelength	<b>532 nm</b>
Compact system	<b>W x L x H = 50 x 50 x 90 cm<sup>3</sup></b>

## > 3D SOFTWARE PACKAGE

PC and flat screen	<b>Win11, 64 bits</b>
Luminis software	<b>Intuitive and powerful slicing tool</b> for Laser 3D-path optimization dedicated to TPP technology
Lithos-software	<b>Machine control, replication, autofocus, alignment</b> and other features

## > OPTIONS AND ACCESSORIES

### Printing materials

- Range of 10 proprietary photoresists (high resolution and high performance polymers, hydrogels, biocompatible materials...)
- Compatible with various commercial materials (Ormocomp, NOA, Formlabs resins...)

**Long-range Z** for printing up to 20 mm-high structures

**Custom sample holders:** multiple samples, 2"/3"/4" wafers, multi-well plates, optical fiber ferrule...

### Additional laser:

- 1064 nm Infrared laser
- Custom laser on demand

### Anti-vibration bench

