microlight3D

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 **from 0.2 to 3 microns**
Writing resolution, vertically (Z) (voxel height)	Adjustable from **0.6 to 10 microns**
XYZ high-resolution writing-range (without stitching)	**100 to 300 microns**
Stitching & replication area (X,Y)	**100 x 75 mm²**
Maximum object height (Z)	**Up to 20 mm** (with long-range Z option)
Surface roughness	**Down to 20 nm** (with anti-vibration bench)
Writing speed	**100 μm/s** at high resolution **5 mm/s** at lower resolution
Laser wavelength	**532 nm**
Compact system	**W x L x H = 50 x 50 x 90 cm³**

> 3D SOFTWARE PACKAGE

PC and flat screen	**Win11, 64 bits**
Luminis software	**Intuitive and powerful slicing tool** for laser 3D-path optimization dedicated to TPP technology
Lithos-software	**Machine control, replication, autofocus, alignment** 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

10 μm

1 mm

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