QUANTUM X BIO

A quantum leap in bioprinting

The Quantum X bio is the first of its kind, enabling submicron printing resolution, and raising the bar for high-precision 3D bioprinting. Powered by Two Photon Polymerization (2PP), the system is the premier tool for miniaturizing bioprinting, redefining what it means to work within advanced biomedical applications, including tissue engineering and regenerative medicine

Optimized for cellular work

With temperature control complimented with onboard sterility measures, a wide range of sterile biomaterials and autoclavable substrate holders, rest assured that whether you are printing directly with cells or seeding post printing, the Quantum X bio has you in pole position to explore biological applications.

Ready. Set. Print.

With user-optimized software solutions, complimented with a library of proven bioprinting STL models the Quantum X bio promises for an intuitive and straightforward set up.

Smart and connected workflows

Monitor every print through sensors and video data to ensure the quality of your print job from start to finish. Optimize your time by controlling the system either from the touch screen or remotely through the powerful desktop software.

Flexibility prioritized

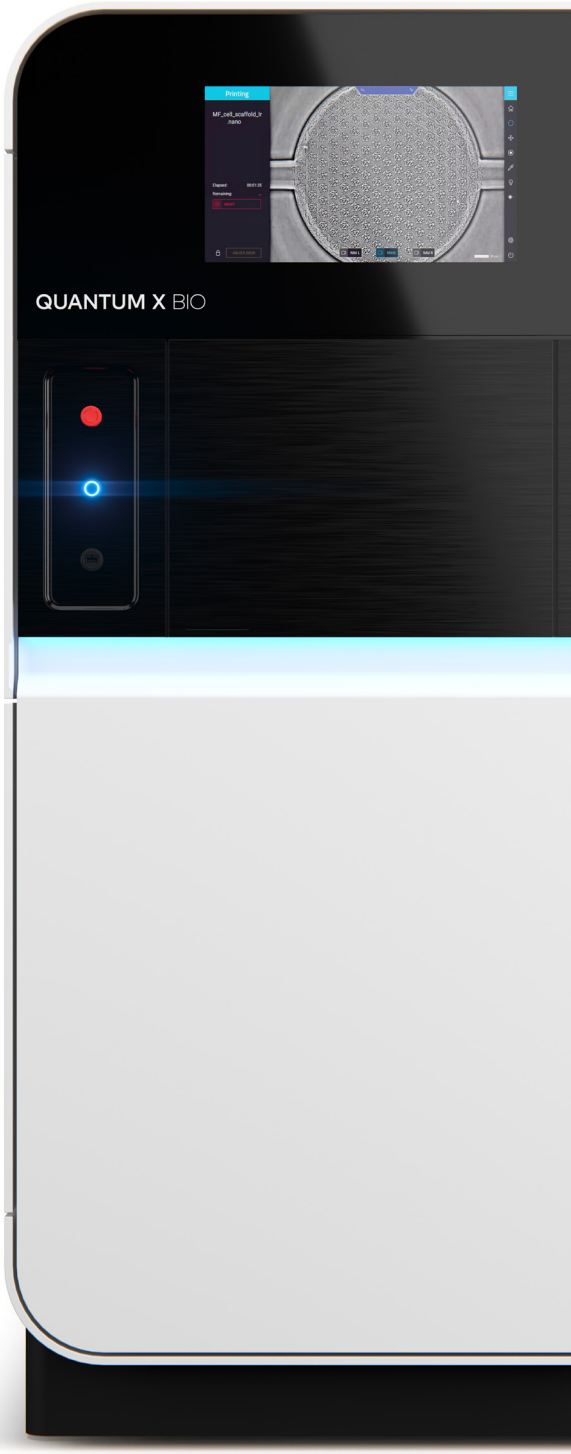
Print virtually any 3D design with unmatched precision and speed, on a wide range of sterile substrates including microscope slides and petri dishes, easily sourced through MatTek and Advanced BioMatrix, members of the BICO family.

Extensive biomaterial offering

Take full control of your research thanks to an open materials platform enabling users to select from commercially available photoresins, or from tailored biomaterials, developed in collaboration with experts from within the BICO group at Nanoscribe, CELLINK and Advanced BioMatrix.

Unprecedented accuracy

Unlock high-performance 3D bioprinting with feature size control down to 100nm on areas up to 25 cm^2.



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CELLINK
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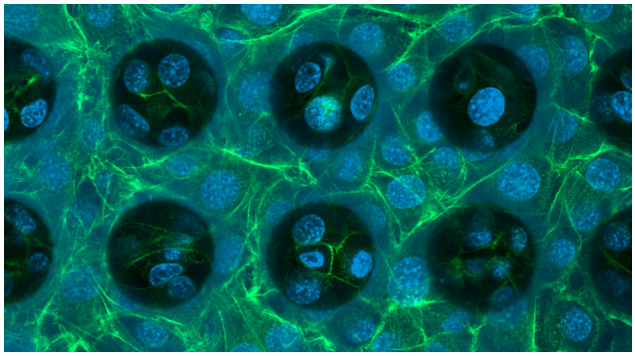
Advanced Biomedical Applications

3D CELL CULTURE

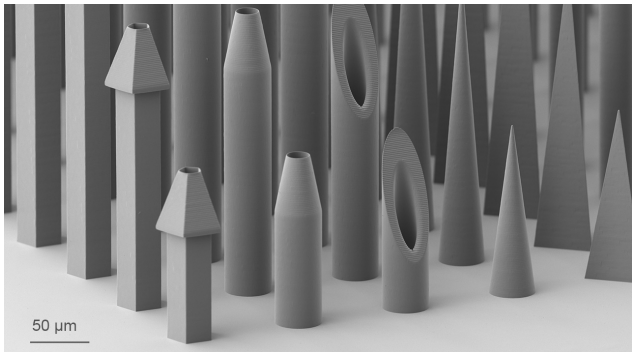


3D printing of microwell arrays for cell cultivation printed using IP-S.

MICROFLUIDICS

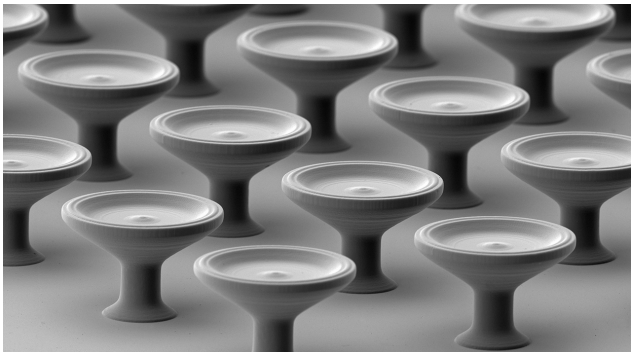
Effectively fabricate vasculature models with microscale printing.

DRUG DELIVERY



Realize high aspect ratio, hollow and sharp tip applications with unmatched precision in delivery methods.

MICRO-PATTERNING



Develop topological and physical cues to better guide cell interactions and adhesions.

Technical Specifications

Surface roughness R_a	down to ≤ 5 nm
Feature size control[1]	down to 100 nm
Shape accuracy	down to ≤ 200 nm
Batch processing	up to 200 typical mesoscale structures over night
Autofocus precision	down to ≤ 30 nm
Print field diameter	25 mm divided by lens magnification
Maximum scan speed[2]	6.25 m/s divided by lens magnification

GENERAL SYSTEM PROPERTIES:

Printing Technology	• Layer-by-layer 3D printing based on Two-Photon Polymerization (2PP) • Two-Photon Grayscale Lithography (2GL ®) with voxel tuning capability
Substrates	• Microscope slides (3 x 1" / 76 x 26 mm) • Wafers 1" (25.4 mm) to 6" (150 mm) • Glass, silicon, and further transparent and opaque materials
Photoresins	• Advanced BioMatrix Hydrogels • Xpect-inx Bioinks • Nanoscribe IP-Photoresins (polymers) • Nanoscribe GP Photoresin (glass) • Customer User Materials
Maximum print area	50 x 50 mm²

Given values may vary depending on the photoresin and structure geometry. [1] 100 nm feature size control in all spatial directions. [2] e.g. for 10x magnification: 625 mm/s

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