Shining a Light on Biosciences

Readily3D

We help biologists push the frontiers of biofabrication

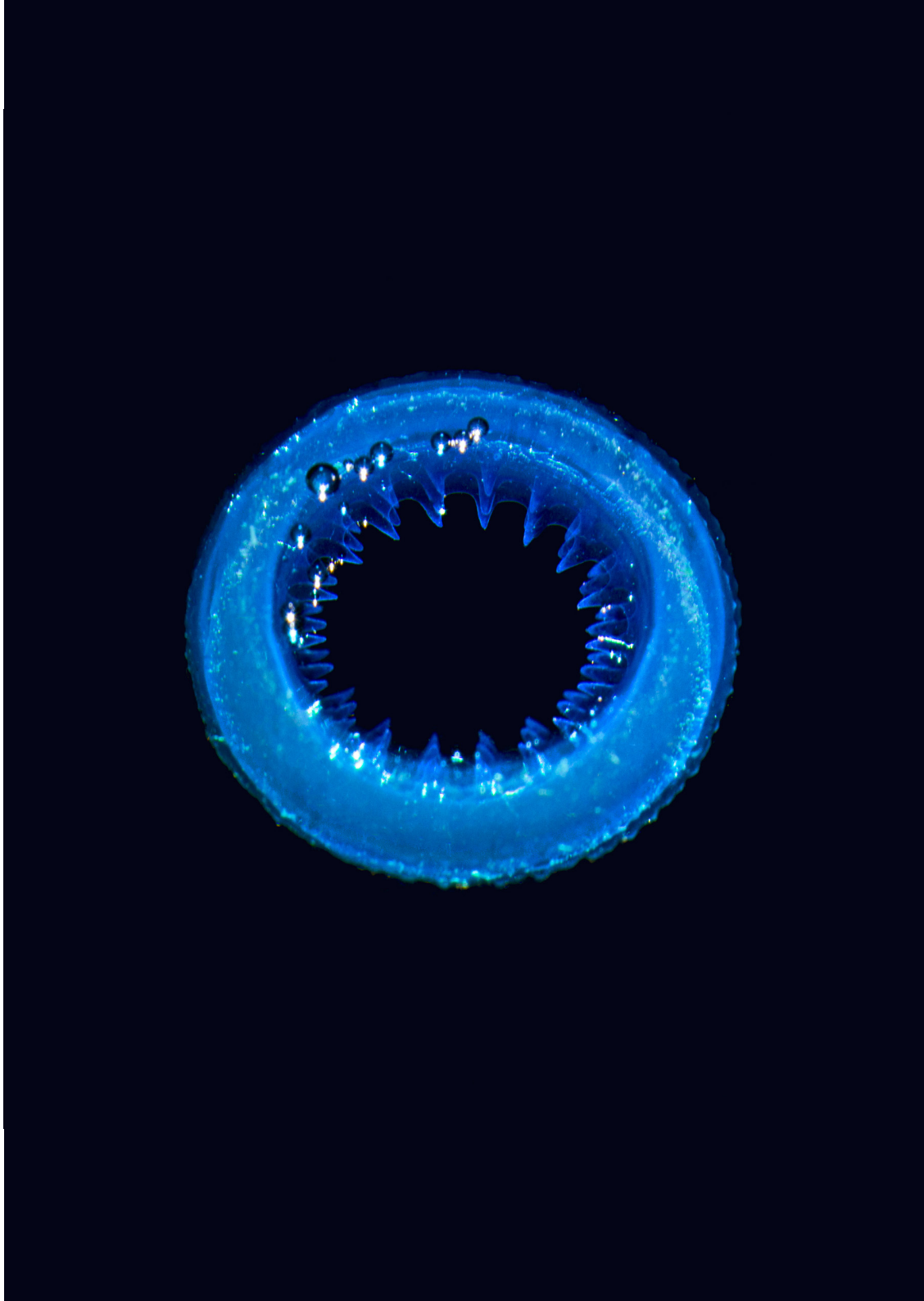
Technology

Tomographic 3D printing rapidly solidifies photosensitive inks in three dimensions, using shaped light beams from multiple angles. As the entire build volume is illuminated simultaneously, centimeter-scale biological systems are produced in just tens of seconds. After printing, the object is simply separated from the uncured ink and collected.

Our printing method is light-based, so it does not induce any shear stress on the printed cells. The remarkably low photoinitiator content (eg 1mg/mL LAP) and low light dose (<600 mJ/cm^2) make tomographic bioprinting a cell-friendly technique.

Tomolite

Complex living constructs shaped by light



Readily bioprinted

Tomolite leverages our contactless tomographic illumination technology to shape sensitive cells and biomaterials into biological systems, without impairing their viability. Volumetric printing not only preserves cells but also makes research more efficient by simplifying design iterations and statistical studies.

Designed for modularity and continuous upgrades

The Tomolite v2.0 can be readily used in any work environment since it is a class 1 laser product, accessible radiation is safe under all conditions of normal use. It accommodates different modules such as various laser sources and build volumes. Our upcoming new modules will also all fit onto this flexible platform.

Examples

Tomolite v2.0

Specifications & models	Standard	Performance
Build diameter	up to 6.3mm	up to 12.5mm
Build height	27mm	27mm
Container diameter range	5 mm - 10mm	5mm - 22mm
Wavelength*	405nm ± 5 nm	400nm ± 1 nm
Pixel size	28µm	28µm
Light intensity	1 to 15mW/cm^2 (average at container) 37.5mW/cm^2 (maximum peak intensity)	1 to 20mW/cm^2 (average at container) 50mW/cm^2 (maximum peak intensity)
Indicative print time	20s – 120s (depends on material)	20s – 120s (depends on material)
Container materials	Autoclavable and reusable glass vials	Autoclavable and reusable glass vials
Rotation speed	10 - 115°/s	10 - 360°/s
Compatible materials	hydrogels, acrylics and silicones	hydrogels, acrylics and silicones
External footprint	27cm x 30cm x 67cm	27cm x 30cm x 67cm
Initial accessories kit	Precision chuck adaptor for vials Vial extraction tool	Precision chuck adaptor for vials Vial extraction tool
Laser class	Class 1 laser product: accessible laser radiation is safe under all conditions of normal use. (IEC/EN 60825:1-2014 certified)	

* other wavelengths available upon request

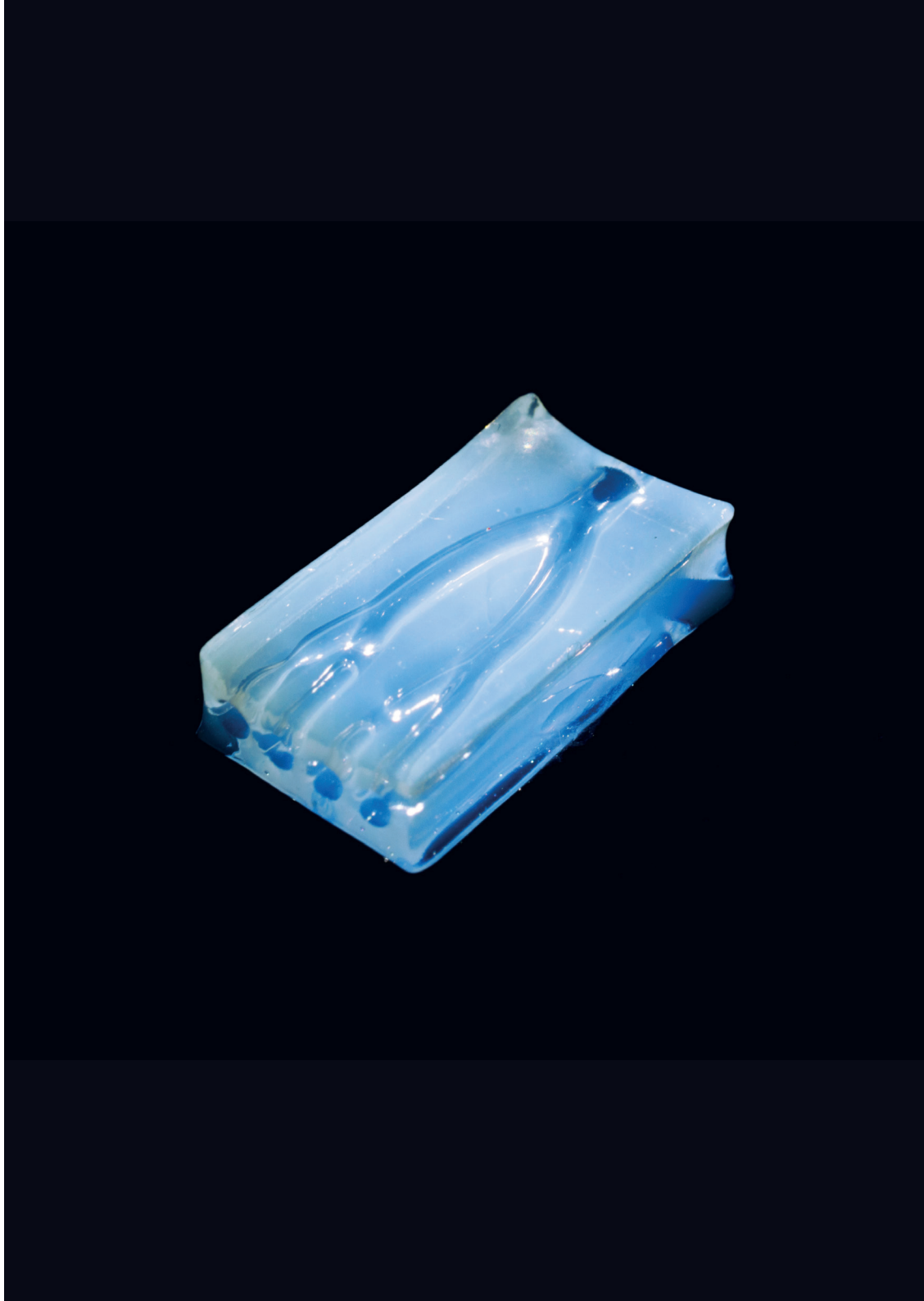
An organoid and cell-friendly bioprinter

Examples of organoid and cell types printed to date

Parameters	Human hepatic organoids	Articular chondroprogenitor cells	Mesenchymal stromal cells
Viability	>90%	>80%	>85%
Cell concentration	Max. 5x106 cells/mL	Max. 10^7 cells/mL	Max. 10^6 cells/mL
Largest construct	6 x 6 x 15 mm	12 x 12 x 3 mm	8.5 x 9.3 mm Cylindrical

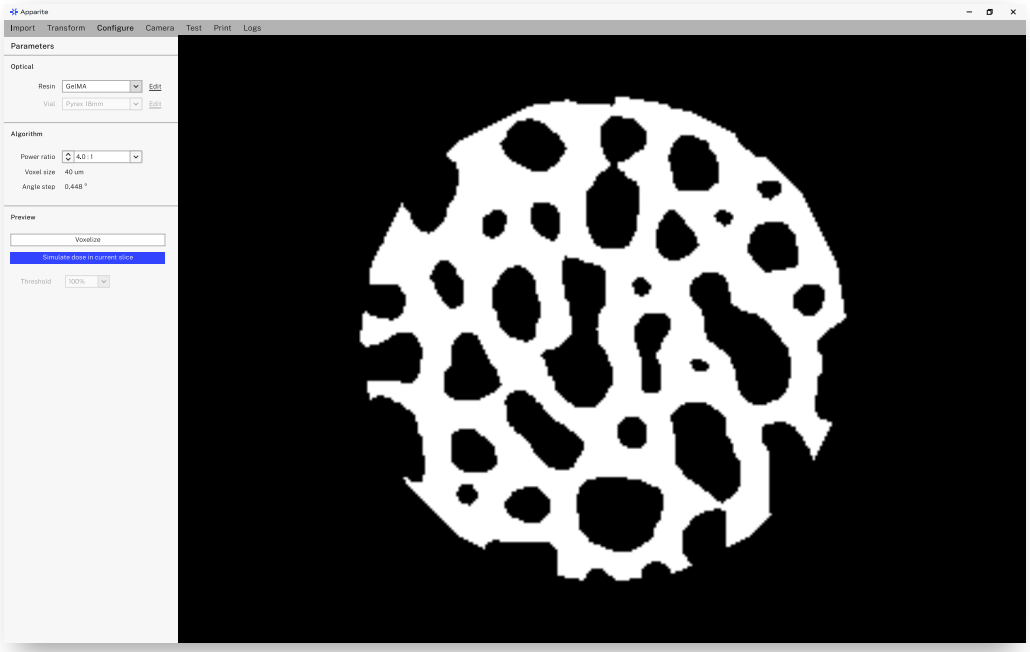
Apparite

Rapidly configure and launch your 3D bioprint



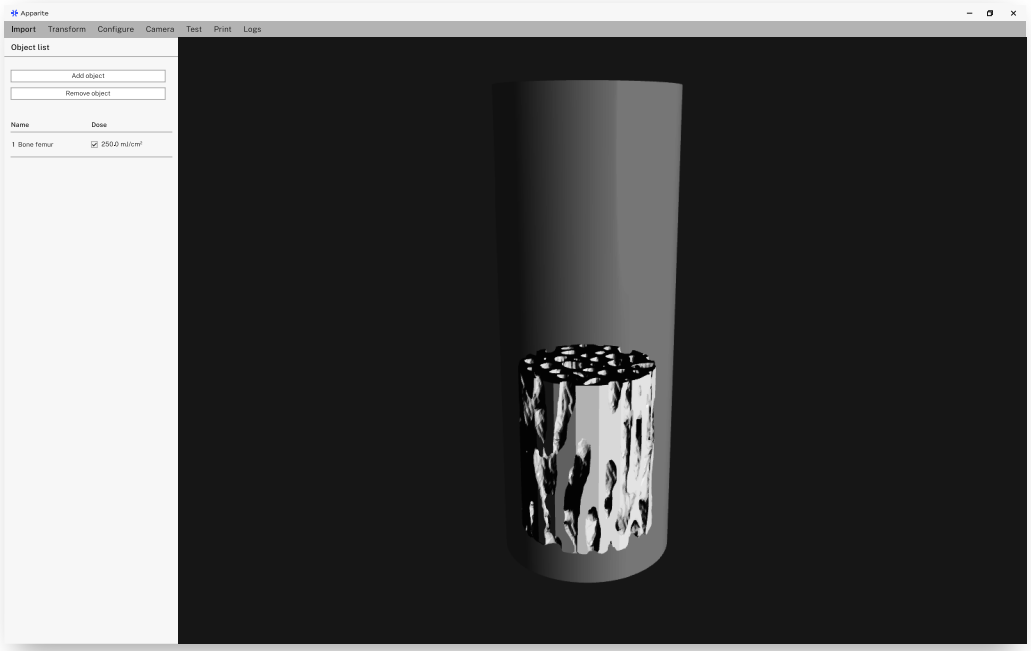
Load, Preview, Print.

Apparite facilitates the preparation of a print while giving users full control over the process parameters. In a few clicks, import the STL geometry of your constructs, configure the material properties and preview the computed light dose distribution.



Specifications

3D object format	STL
Multi-object printing	Supported
Transformations	Position Rotation Scaling
Beam computation time	Approximately 30s - 90s (cloud-accelerated)
Print parameters	Dose Intensity Exposure time Print speed Number of rotations Projection rate
Computation parameters	Voxel size Angular step Dose contrast Resin compensation
Build volume monitoring	Live camera feed
Print log	Automatic
Dose estimation	Preview of dose distribution before printing Dose test procedure (with small volume of ink)
Supported operating system	Windows 10 and 11



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Let’s work together

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