LUMEN X

GEN 3

The new standard
for light bioprinting

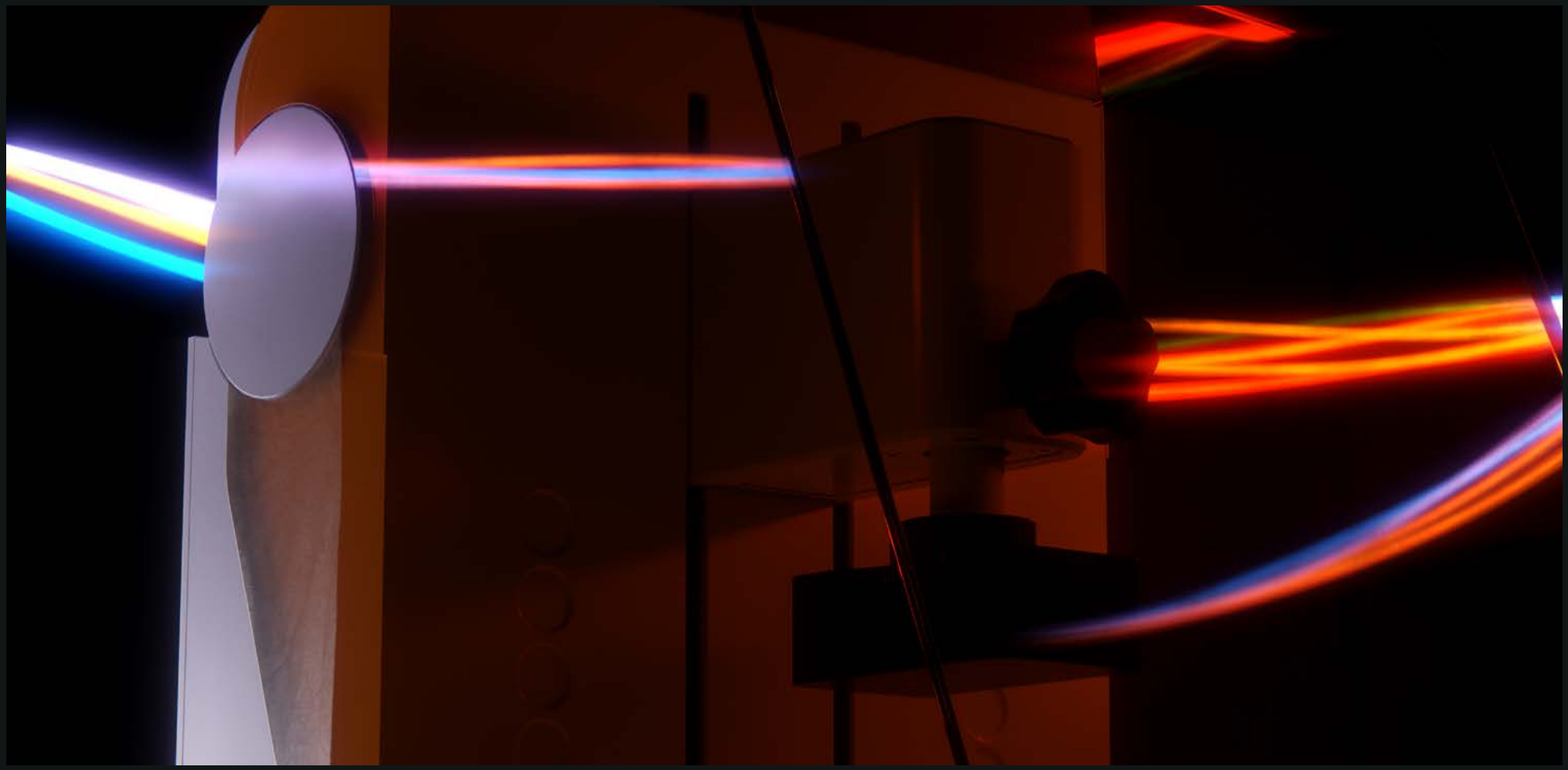


CELLINK
A BICO COMPANY

SETTING THE STANDARD OF BIOPRINTING SINCE 2016

Developing solutions to maximize your research and deliver greater insights on the journey to create the future of health.

Since our inception, we have been committed to meeting our customers' needs by producing versatile, high-quality and easy-to-use systems and solutions. Our mission is to provide tools with cutting-edge technology which make a meaningful impact in your work, delivering greater insights on the journey to create the future of health.



Unleash the power of light printing on your research.

Experience the new standard for benchtop DLP bioprinters. Built from the ground up with CELLINK's cutting-edge technology and powered by 405 nm visible light, this system brings a new degree of precision and utility to the light-based bioprinter space.

Backed with years of customer suggestions, the third generation of LUMEN X™ takes every need and detail into consideration. With a new robust and rethought design, as well as user-friendly software, this printer makes light-based bioprinting a breeze – unlocking advantages across numerous applications.



MORE FROM EVERY PRINT

Achieve greater results with an array of new features and simplified workflows.

Designed for live cell printing

LUMEN X™ Gen 3 is built with live cell printing in mind. The new tighter temperature control, a smooth printing mechanism, and sterility across the printing workflow join together to increase cell viability. The autoclavable build platform has increased reusability without compromising on sterility.

Tight temperature control

Work with a wider than ever range of materials or focus on studying the thermal properties of a single material by setting the temperature anywhere between room temperature and 60°C.

Consistent prints – every time

With a uniform distribution of intensity across the entire build platform, the LUMEN X™ Gen 3 ensures consistent crosslinking of photoinks independent of position. Levelling up the ability for array printing.

Modular build platforms

With an expanded range of build platforms, print a variety of model sizes and materials with ease and say goodbye to unnecessary waste of photoinks.

Precise and complex printing

An intuitive software combined with high feature resolution and optimized photoinks makes working on organ-on-a-chip models and developing microfluidic chips an effortless experience.

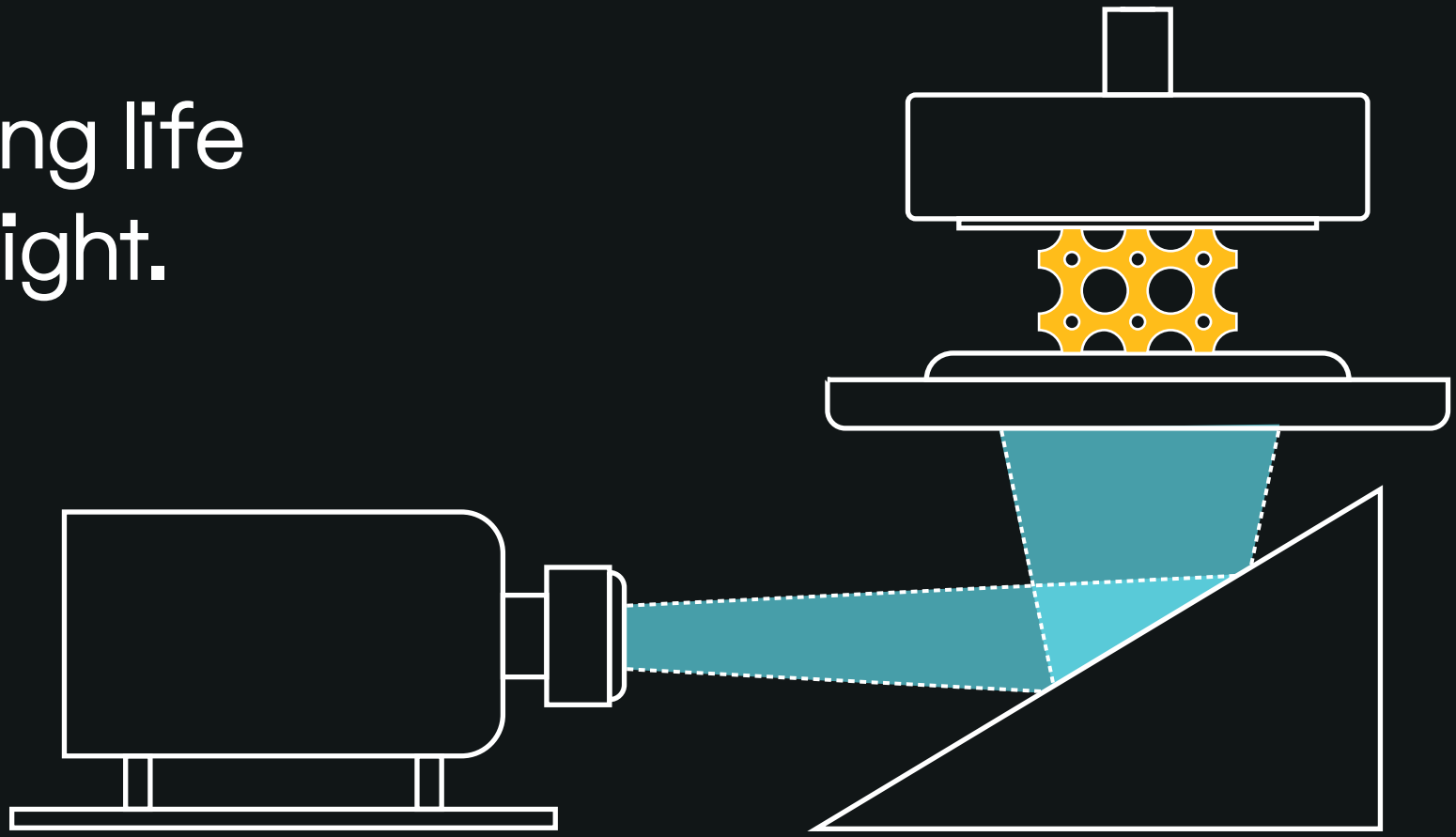
Grayscale printing

Accurately tune the stiffness of your material and create biomechanical gradients on demand to capture the finer details of in-vivo biology.

Temperature range	Pixel Resolution	Build volume
RT*-60°C	35 µm	68x38x100 mm

**Room/Ambient temperature*

Building life with light.



The LUMEN X™ is optimized to build hydrogel structures by beginning with a droplet of light-sensitive, liquid PhotoInk™ in a vat. An industrial blue-light projector exposes a series of images onto the vat, like a slideshow. The areas of the droplet that are exposed will crosslink and solidify into a single layer. The build platform moves up to allow each layer to stack and build the part.

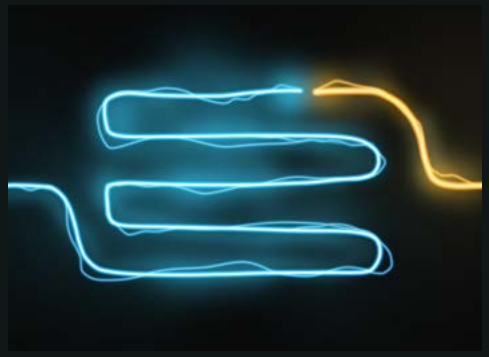
This powerful printing mechanism provides users with the ideal entry into the world of light bioprinting, with the backing and support of the leading bioprinting company. Enabling easy access to high precision and versatile bioprinting for users to create complex structures that mimic the architecture and function of natural tissues.

With the LUMEN X™ Gen 3, we invite you to push the limits of your research, widen your horizons and challenge you to IDEATE more complex models, ILLUMINATE and bring these to life with the LUMEN X™ and thus CREATE the future of health.


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Further reading

Versatility across numerous applications.



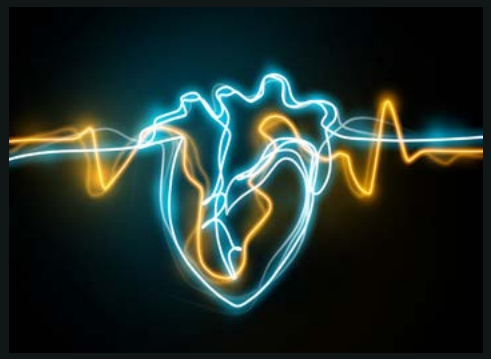
Microfluidics

With high precision and resolution, the LUMEN X™ Gen 3 enables the creation of complex microfluidic structures with intricate geometries for controlled fluid flow. Users can work directly with cells or seed them later. The LUMEN X™ eliminates lengthy casting processes and finally brings a much desired time- and cost-effective solution for reproducible microfluidic fabrication.



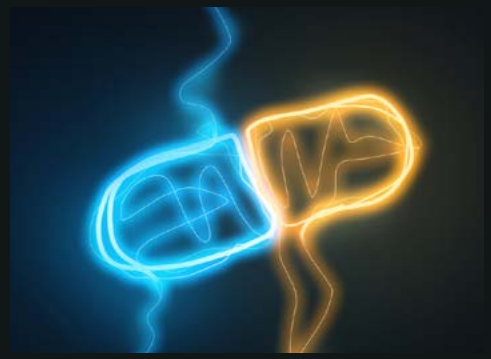
Material development

The LUMEN X™ allows users to develop and use their own materials without workarounds or extra fees, opening the door for the development of materials with unique properties and novel tissue engineering applications. With precision control over all key parameters like temperature, intensity and exposure times, researchers can glean a greater understanding of their material's behavior.



Tissue engineering

Supported by the DLP technology, the LUMEN X™ enables researchers to address one of the most long-standing challenges - fabricating complex vascular networks. Coupled with grayscale printing onboard for the first time ever, the LUMEN X™ Gen 3 truly unlocks a new degree of capability in capturing in-vivo like conditions.



Drug development

Drive down the cost of drug development through models that provide greater insight. Accurately create diseased and healthy tissue constructs ready to be dosed with compounds for early-stage compound selection.

With our unwavering commitment to your research success, our seasoned team of biomaterial experts have developed kits with recipes and protocols, which take you from stock solutions to ready-to-print photoinks optimized for use on the LUMEN X™ Gen 3.

Xcite

Xcite, CELLINK's novel photoinitiator specifically designed for developing optimal photoinks for light-based bioprinting. With exceptional biocompatibility, gold standard cell viability, and rapid polymerization properties, Xcite enables researchers to develop intricate cellular structures at lightning speeds.

Xsorb

Xsorb is a biocompatible photoabsorber, specifically formulated to enable complex structures like microfluidic systems on CELLINK light-based systems. Produced with stringent quality control, Xsorb provides users with exceptional control, and precision during the DLP printing process.

PEGDA X

Fine-tuned and tailored for optimal performance, PEGDA X is the go-to starting ink for DLP printing. Blended with low molecular weight PEGDA, this ready-to-use photoink provides users with a mechanically robust material with high print fidelity.

PEGDA Soft

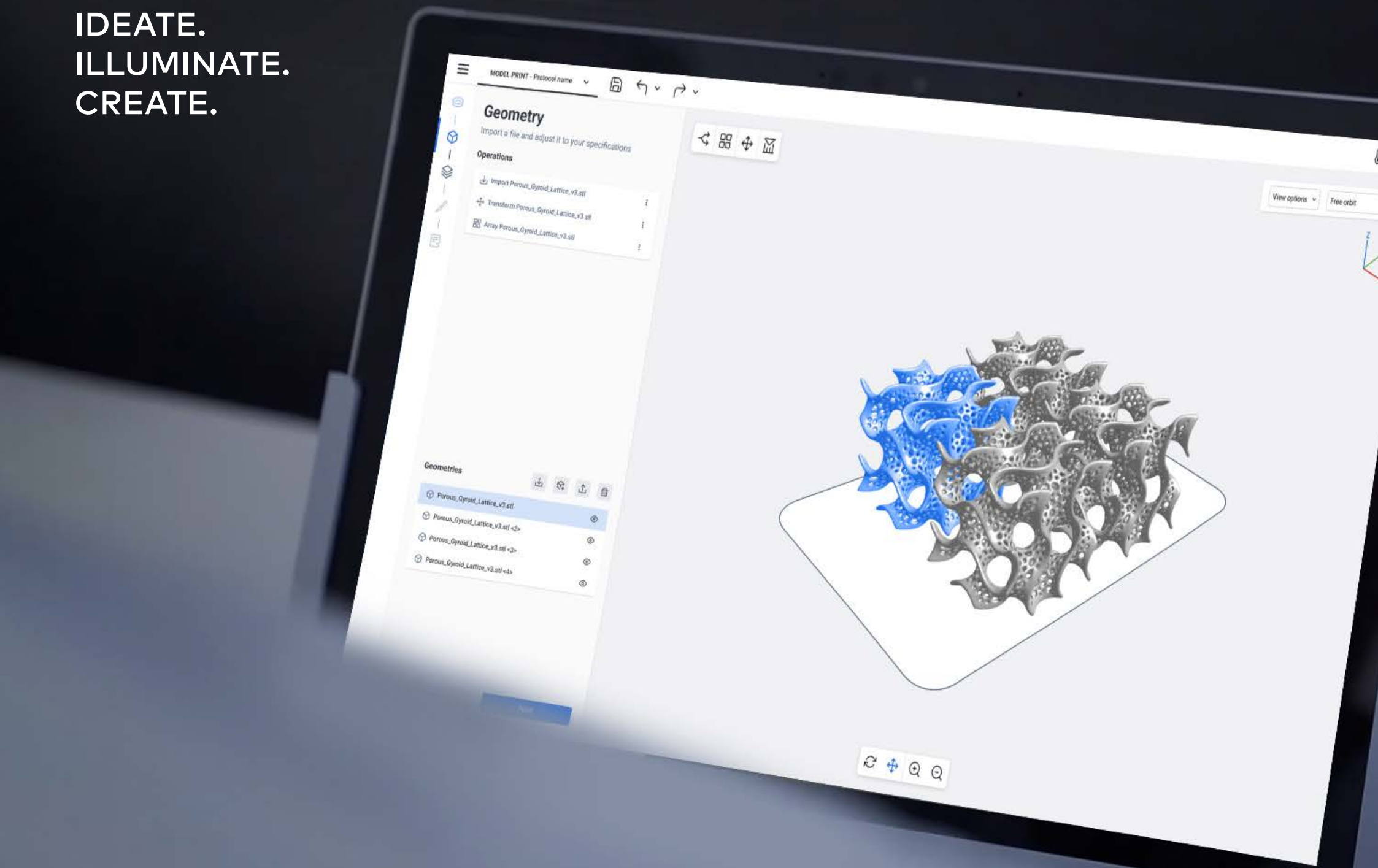
Customizable and easy to use, PEGDA Soft stock solution is the ideal starting point for researchers looking for a photosensitive material with an inherent stiffness that closely mimics in-vivo conditions and provides an environment conducive to permeability dependent processes like nutrient, waste and gas exchange.

GelMA 95%

The cornerstone of live cell bioprinting, GelMA provides a biodegradable base material with tremendous cell attachment capabilities and mechanical properties that accurately capture physiological conditions. Provided as a stock solution, researchers have the freedom to make the most of this wonder biomaterial's tunability. Blend with proteins, growth factors or other photosensitive polymers like PEGDA, to create the ideal recipe for your research application.



IDEATE.
ILLUMINATE.
CREATE.





DNA STUDIO **ILLUMINATE**

The go-to-bioprinting software, now fine-tuned for light biofabrication.

Introducing for the first time DNA STUDIO ILLUMINATE, a fresh take on the world's leading bioprinting software tailored for light bioprinting and its applications. Available on-board the LUMEN X™ as well as an advanced version for desktop machines. Guiding users all the way from construct generation to monitoring prints and ensuring repeatable success. Now packed with the ability to **alter shapes**, **develop arrays** for multiplexed printing, **view microfluidic systems** and, for the first time, **set up grayscale printing** for biomechanical gradients.

Thanks to close collaboration with users and the strong foundations of DNA STUDIO, with ILLUMINATE we bring an intuitive interface which packs all the features necessary to bring your idea to life.

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