



Your boldest vision. Realized.

Exceptional throughput and transformative economics, more sustainably than ever

**NovaSeq™ X and NovaSeq X Plus
Sequencing Systems**

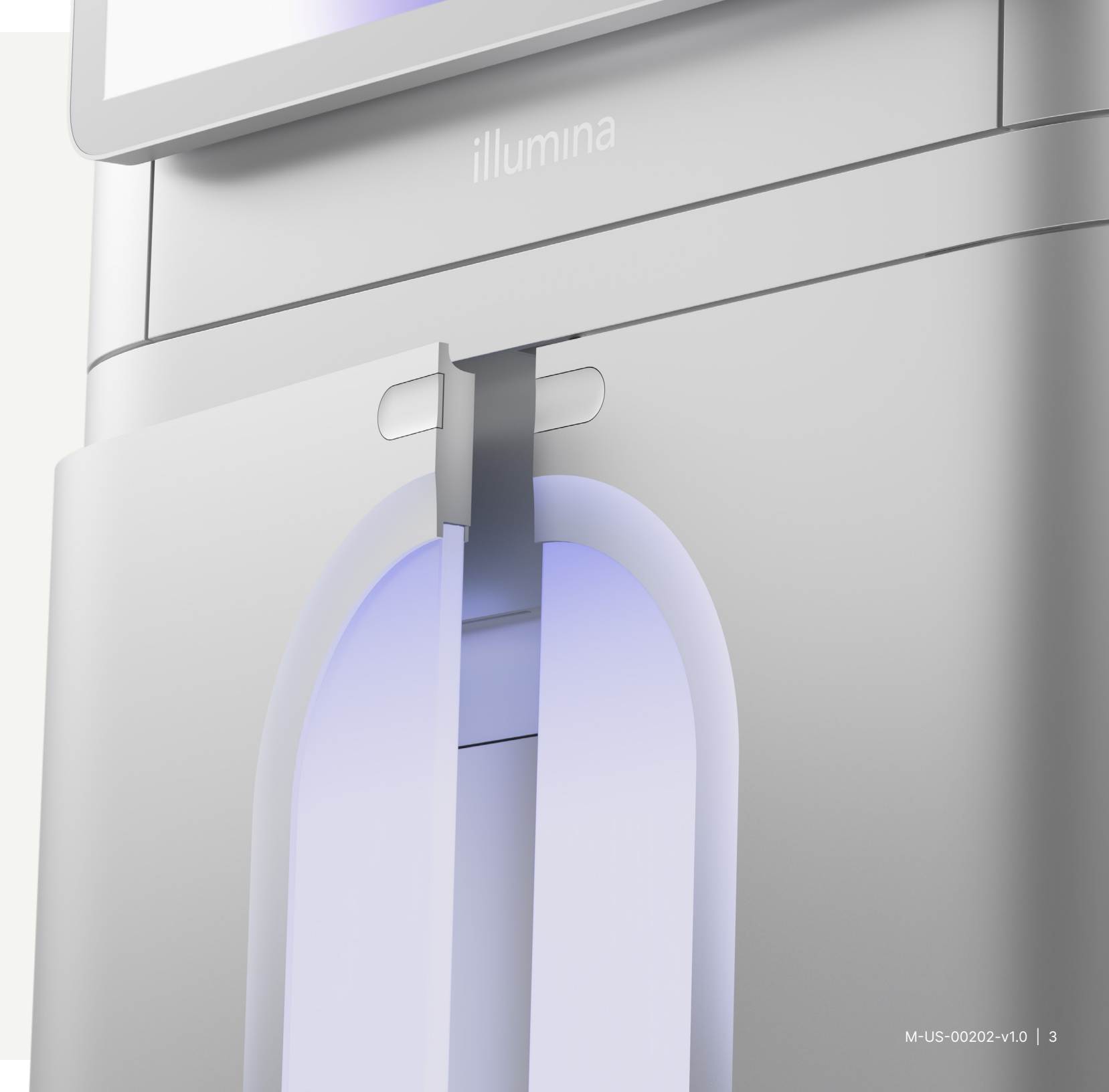
Your boldest ambitions. Now possible.

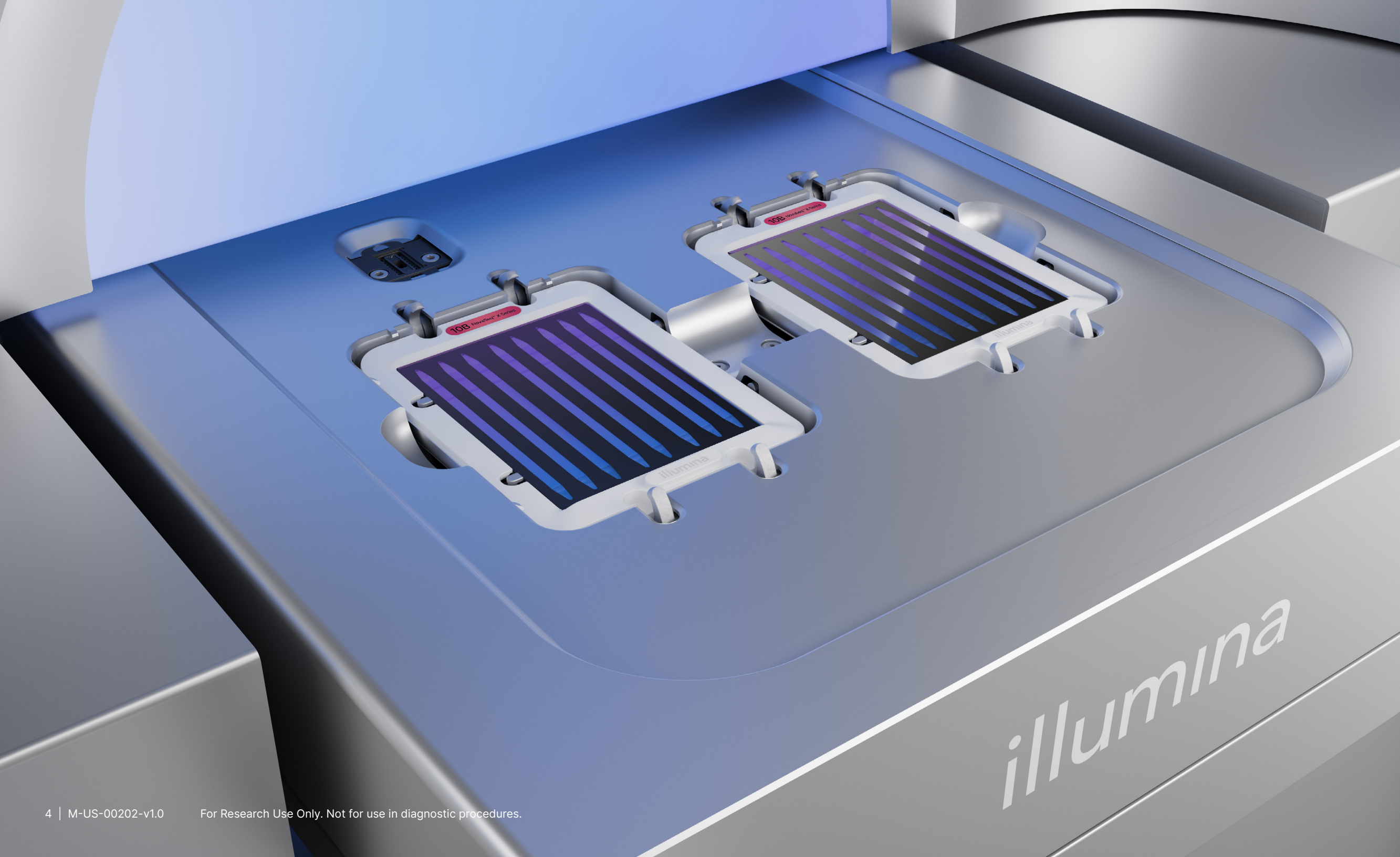


Dream big. In fact, dream bigger than ever before. With the NovaSeq X series, you can expand the possibilities of how far next-generation sequencing (NGS) can go—exponentially.

Now you have the potential to answer the most complex questions in human genomics, with larger sample cohorts, deeper sequencing, and more data-intensive methods—from whole-genome sequencing to multiomics. Implications for cancer and genetic disease research, and beyond, are far-reaching.

This is transformational throughput. The NovaSeq X series takes user-centric design to the next level and shrinks the total cost of ownership. All to empower genomic scientists to grasp answers previously unattainable, in an unparalleled, smooth experience.





You're ready to change
the world. Go right ahead.

Extraordinary
throughput

Exceptionally accurate
view of the genome

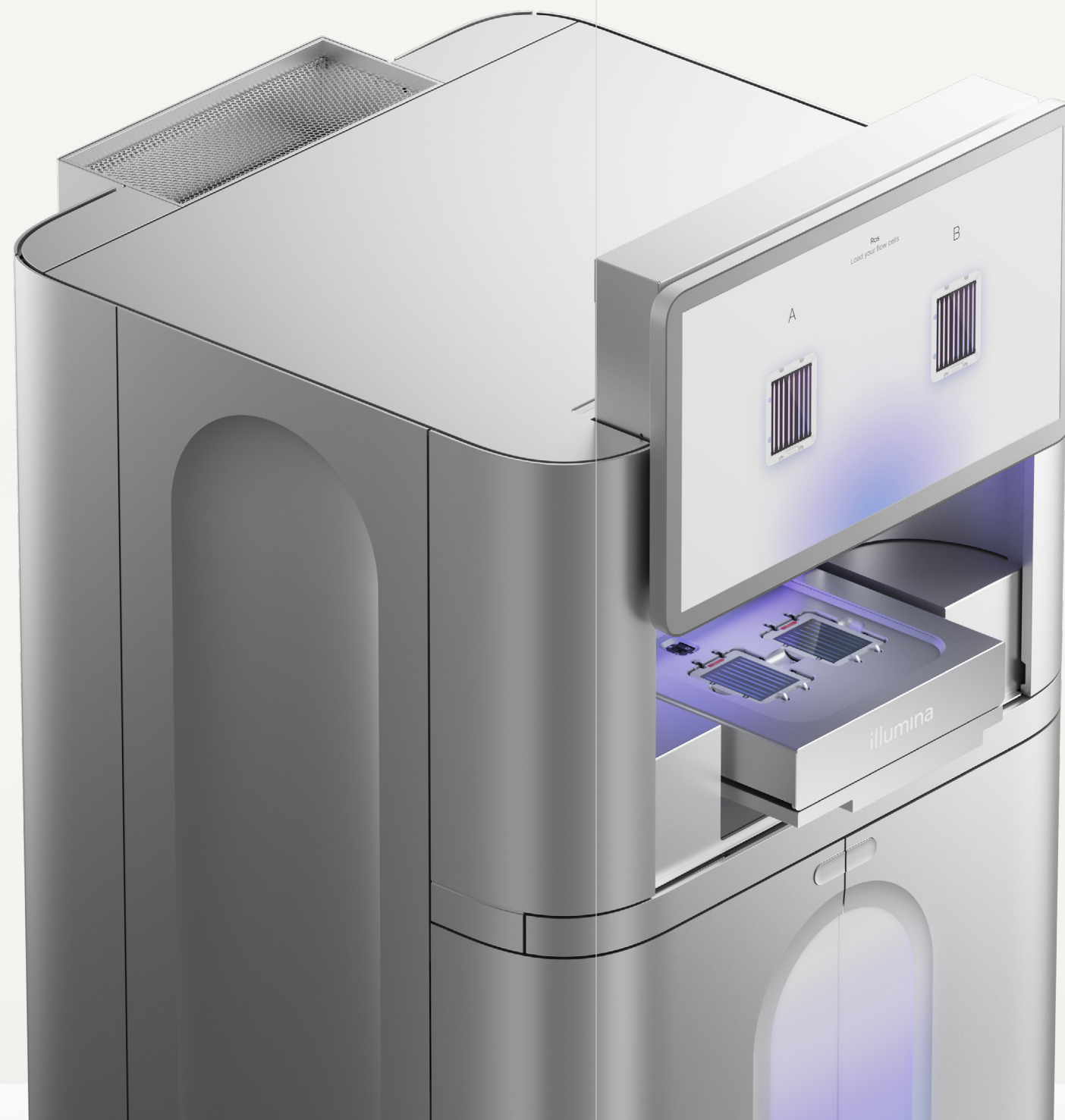
Operational simplicity and
streamlined workflows

Groundbreaking
sustainability

World-class service
and support

Powered by XLEAP-SBS™ chemistry

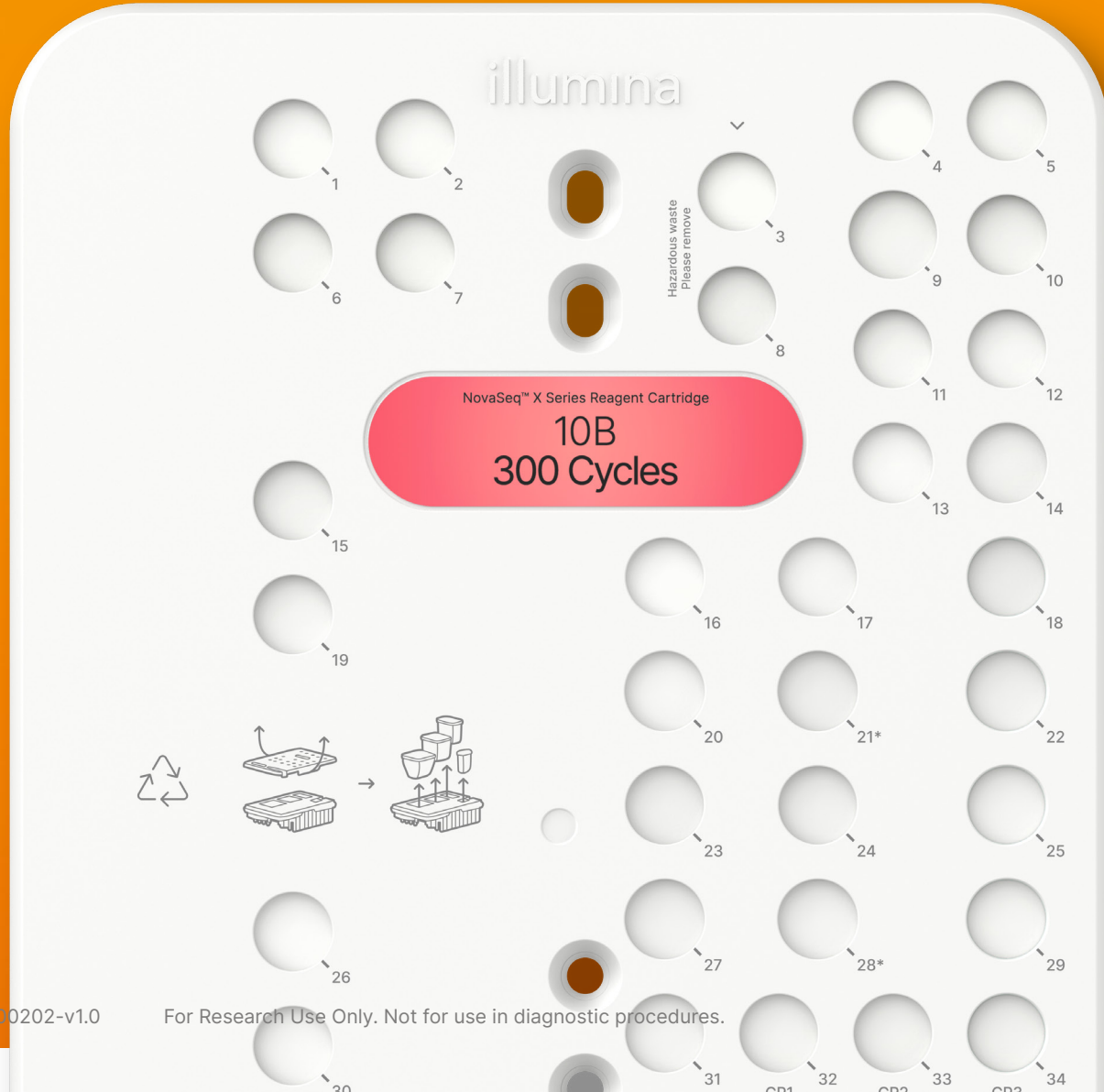
Our fastest, highest quality, and most robust sequencing by synthesis (SBS) chemistry to date. Built from the proven foundation of the most widely adopted and used SBS chemistry, XLEAP-SBS chemistry delivers improved reagent stability, up to 2× faster cycle times, and up to 3× greater accuracy.



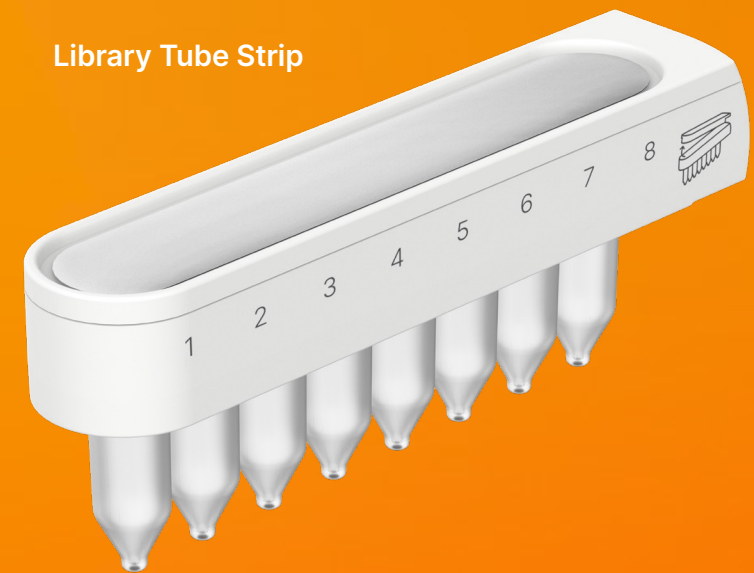
Maximum throughput to unleash your ambitions

This is the power you've been waiting for. With the NovaSeq X series, you'll have the throughput and accuracy you need to deliver more data-intensive applications for meaningful insights at scale. Ultrahigh-resolution optics and ultrahigh-density flow cells give you high-efficiency sequencing, from 1.6 billion to 52 billion single reads per run, at our lowest price per sample yet.

Reagent Cartridge



Library Tube Strip



Pre-Load Buffer



Custom-Primer Buffer

Lyo Insert



Flow Cell



Buffer Cartridge



Two instrument configurations:

The NovaSeq X Plus and the NovaSeq X systems. Two unmatched sequencing systems. Two game changers. You'll find they're designed for an intuitive and optimized high-throughput sequencing workflow.

NovaSeq X Plus Sequencing System

- Dual-flow cell system
- Up to 16 Tb per dual flow cell run or > 128 human genomes at 30× coverage
- Independent flow cell operation

NovaSeq X Sequencing System

- Single-flow cell system
- Up to 8 Tb per run or > 64 human genomes at 30× coverage
- Upgradeable to dual flow cell instrument



NovaSeq X Plus

NovaSeq X

The NovaSeq X series

Ultimate user experience

Elegant operational simplicity is built in. You'll find fewer steps in the workflow, and less hands-on time. This is push-button sequencing from start to finish, including automated onboard cluster generation, automated independent lane loading, and automated post-run wash. Doors and drawers are lit with a glow to help guide workflow. All excellent efficiencies to streamline operations.

Thoughtful ergonomic design

From setup to use to storage, you'll appreciate features like an extra-large, height-adjustable 4K-resolution touch screen, and a hidden keyboard and touchpad. The lightweight buffer cartridges are easy to handle and the reagent cartridges are easy to disassemble and recycle.

Streamlined, comprehensive informatics

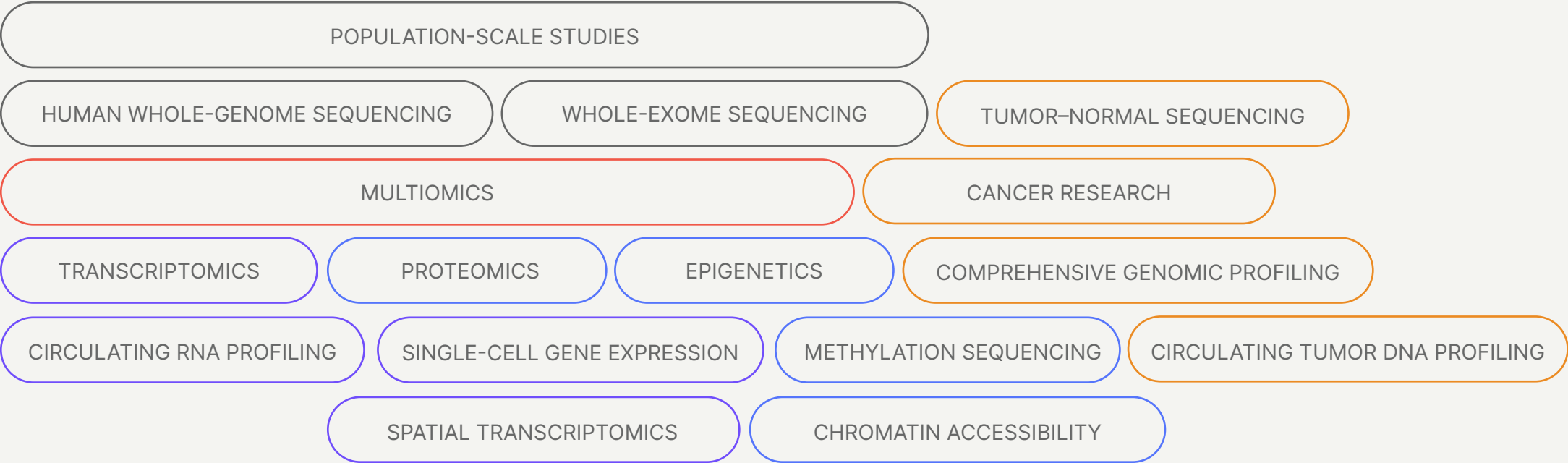
We meet you where your data is, onboard or in the cloud, with flexible run planning options, touchless secondary analysis workflows, and automated lossless data compression for simpler bioinformatics. Data compression means greatly improved data management and storage.



Performance parameters*	1.5B flow cell*	10B flow cell*	25B flow cell*
Max output per run†	165 Gb–1 Tb	1–6 Tb	8–16 Tb
Single reads per run†	1.6–3.2 billion	10–20 billion	26–52 billion
Paired-end reads per run†	3.2–6.4 billion	20–40 billion	52–104 billion
Max read length	2 × 150 bp	2 × 150 bp	2 × 150 bp
Run time	~13–21 hr	~18–24 hr	~48 hr

* NovaSeq X Plus system will be launched in Q1 2023. NovaSeq X system available later in 2023. 10B flow cell available Q1 2023. 1.5B and 25B flow cells available H2 2023. Performance metrics are subject to change.
† Highest output possible with dual flow cell runs on the NovaSeq X Plus system. The NovaSeq X Plus system is capable of single flow cell runs or dual flow cell runs. NovaSeq X system is capable of single flow cell runs.

Unimaginable experiments, made unbelievably cost efficient

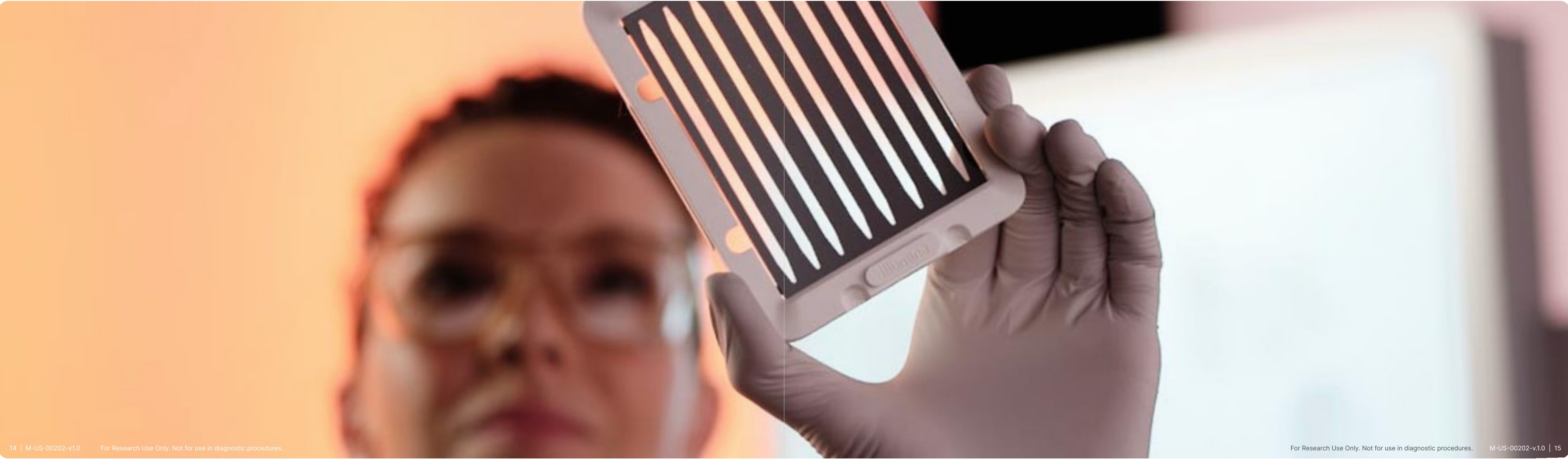


The NovaSeq X series is **driven by your vision** to make your biggest experiments more affordable. Perform more ambitious projects. Increase your statistical power.

Study many more samples under different conditions or time points, to reveal dynamic properties of cells and biological systems. Reach more insights, faster, in larger sample cohorts.

For genetic disease research, cancer studies, and multiomics, you'll drive the kind of sequencing depth and scale that will unlock and revolutionize personalized medicine. Quite simply, transform the future of human health.





Impact the world. Not the environment.

The sustainability story of the NovaSeq X series is enabled by its technology strides.
We're working to set a new industry standard.

Save time and money with a 90%
reduction in packing weight and waste

Maximize storage space with
compact cartridges and packaging

Save disposal costs with more recyclable
plastics and no dry ice or ice packs

Components such as a plant-based
biopolymer cartridge add to sustainability

Vast improvements in shipping and receivable
consumables. Smaller footprint and ambient
temperatures save time and space.



20 years of innovation

Illumina strives to be the best worldwide partner possible, from groundbreaking genomics innovations to ultimate user experience, including exceptional customer service. With our global presence, we have the support to facilitate your success. Wherever you are in the world, we provide the talent, resources, and solutions to maximize your up time.

Our goal is to apply emerging technologies to the analysis of genetic variation and function, making studies possible that were not even imaginable just a few years ago. And this is precisely the power of the NovaSeq X series.





We are always available for questions, insights, and conversation.

Visit us at [illumina.com](https://www.illumina.com).

1.800.809.4566 toll-free (US) | +1.858.202.4566 tel
techsupport@illumina.com | www.illumina.com

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