Redefine possible

Illumina Sequencing Systems

M-GL-00451 v5.0

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You’re driven by innovation. So are we.

The power of next-generation sequencing (NGS) has never been so expansive, promising, and exciting. Your boldest goals have every chance of being realized. At Illumina, we provide you with the tools and innovations you need to unlock the power of the genome.

In genetic disease, reproductive health, oncology, microbiology, agriculture, and beyond, researchers and clinicians are relying on Illumina systems to deliver data that powers groundbreaking insights.

With a full suite of systems, we have the right solution to meet your ever-evolving needs.

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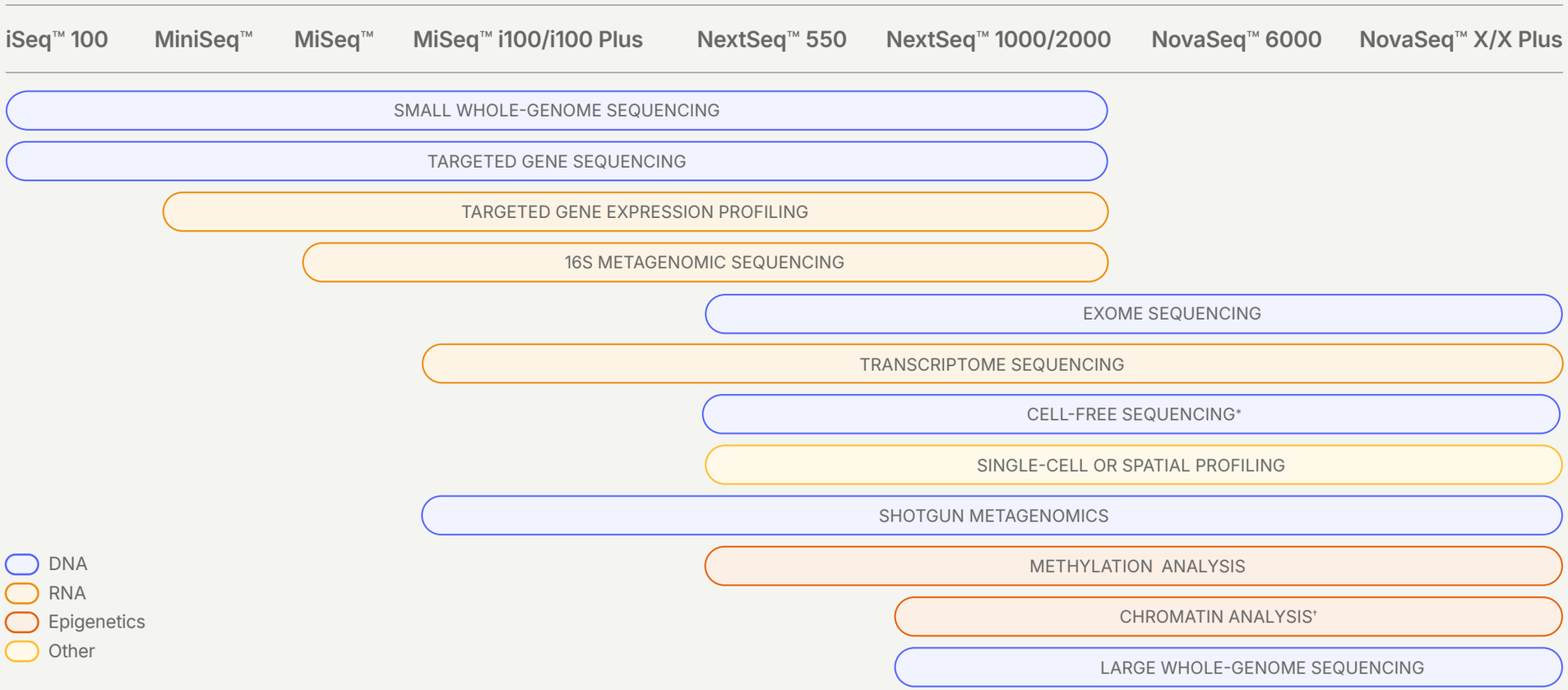
A breadth of solutions.
A whole world of answers.



* Cell-free sequencing includes noninvasive prenatal testing (NIPT) and liquid biopsy.
† Chromatin analysis includes assay for transposase accessible chromatin (ATAC-Seq), chromatin immunoprecipitation (ChIP-Seq), and chromatin conformation capture (Hi-C).

From everyday tasks to your boldest projects, there's an Illumina sequencing system to meet your needs and reach your goals.‡

Research

Our benchtop sequencing solutions, including the MiSeq i100 Series and the NextSeq 2000 Sequencing System, give you the power of Illumina NGS technology in a highly accessible and flexible design. Cited in over 200,000 peer-reviewed publications, our benchtop sequencing systems have been trusted for over a decade.§

Our production-scale sequencing systems enable high-throughput, data-intensive applications. The NovaSeq X Series is quite simply a revolution in genomics, powering your studies with exceptional throughput and accuracy. Projects previously thought out of reach are now possible.

Diagnostic

For *in vitro* diagnostic (IVD) applications, clinical testing on the MiSeqDx,** NextSeq 550Dx,** and NovaSeq 6000Dx** instruments leads to deep insights that help improve patient outcomes.

‡ Throughput and data intensity determines system recommendations for methods and applications.

§ Data calculations on file, Illumina, Inc. 2022.

** For *In Vitro* Diagnostic Use. Not available in all regions and countries.

NGS at your fingertips

	iSeq 100 System	MiniSeq System			MiSeq System				MiSeq i100 and MiSeq i100 Plus Systems[a]			
Flow cell	i1	Mid-output	Rapid	High-output	Nano	Micro	v2	v3	5M	25M	50M	100M
Output range	144 Mb–1.2 Gb	2.1–2.4 Gb	2 Gb	1.65–7.5 Gb	300–500 Mb	1.2 Gb	750 Mb–8.5 Gb	3.8–15 Gb	1.5–3 Gb	2.5–15 Gb	5–30 Gb	10–30 Gb
Single-end reads per run	4M	8M	20M	25M	1M	4M	15M	25M	5M	25M	50M	100M
Run time (hr)[b]	9–19	17	< 5	7–24	17–28	19	5.5–39	21–56	7–15	4–15	4–15	5–8
Maximum read length (bp)	2 × 150	2 × 150	1 × 100	2 × 150	2 × 250	2 × 150	2 × 250	2 × 300	2 × 300	2 × 300	2 × 300	2 × 150
Included data analysis	Local Run Manager	Local Run Manager			Local Run Manager				DRAGEN™ software			

a. The MiSeq i100 System supports the 5M and 25M flow cells only; the MiSeq i100 Plus System supports all four flow cells.

b. Listed run times are estimates.


Sequencing
complete
Eject consumables
Home

Power and flexibility on your benchtop

	NextSeq 550 System[a]		NextSeq 1000 and NextSeq 2000 Systems			
Flow cell	Mid-output	High-output	P1[b]	P2[b]	P3[c]	P4[c]
Output range	16–39 Gb	25–120 Gb	10–60 Gb	40–240 Gb	120–360 Gb	90–540 Gb
Single-end reads per run	130M	400M	100M	400M	1.2B	1.8B
Run time (hr)	15–26	11–29	8–34	12–42	18–40	12–44
Maximum read length (bp)	2 × 150	2 × 150	2 × 300	2 × 300	2 × 150	2 × 150
Included data analysis	Local Run Manager		Onboard DRAGEN secondary analysis			

a. The NextSeq 550 System includes array scanning functionality for cytogenomic, methylation, and karyomapping applications.
b. Specifications for NextSeq 1000/2000 XLEAP-SBS™ reagents shown.
c. Specifications for NextSeq 2000 XLEAP-SBS reagents shown. P3 and P4 flow cells are available for the NextSeq 2000 System only.


Start

Production-scale systems to maximize output

	NovaSeq 6000 System				NovaSeq X System			NovaSeq X Plus System		
Flow cell	SP	S1	S2	S4	1.5B	10B	25B	1.5B	10B	25B
Flow cells processed per run	1 or 2	1 or 2	1 or 2	1 or 2	1	1	1	1 or 2	1 or 2	1 or 2
Output range	65–800 Gb	134 Gb–1 Tb	333 Gb–2.5 Tb	280 Gb–6 Tb	165–500 Gb	1–3 Tb	8 Tb	165 Gb–1 Tb	1–6 Tb	8–16 Tb
Single-end reads per flow cell	800M	1.6B	4.1B	10B	1.6B	10B	26B	1.6B	10B	26B
Run time (hr)	13–38	13–25	16–36	< 44	17–23	18–25	~48	17–23	18–25	~48
Maximum read length (bp)	2 × 250	2 × 150	2 × 150	2 × 150	2 × 150	2 × 150	2 × 150	2 × 150	2 × 150	2 × 150
Included data analysis	—				Onboard DRAGEN secondary analysis					


A
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B
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More clinical options.
More meaningful answers.

MiSeqDx Instrument[a]

NextSeq 550Dx Instrument[a]

NovaSeq 6000Dx Instrument[a]

	MiSeqDx v3 (300 cycles)	Capabilities in Research mode[a]	NextSeq 550Dx High Output v2.5 (300 cycles)	NextSeq 550Dx High Output v2.5 (75 cycles)	Capabilities in Research mode[a]	NovaSeq 6000Dx S2 v1.5 (300 cycles)	NovaSeq 6000Dx S4 v1.5 (300 cycles)	Capabilities in Research mode[a]
Flow cells processed per run	1	1	1	1	1	1 or 2	1 or 2	1 or 2
Output range	≥ 5 Gb	300 Mb–15 Gb	≥ 90 Gb	≥ 22.5 Gb	16–120 Gb	1–2 Tb	3–6 Tb	80 Gb–6 Tb
Single-end reads per flow cell	≥ 15M	25M	≥ 300M	400M	400M	4.1B	10B	10B
Run time (hr)	24	5.5–56	< 35	< 11	11–29	≤ 40	≤ 45	13–44
Maximum read length (bp)	2 × 150[b]	2 × 300[b]	2 × 150	1 × 75	2 × 150	2 × 150	2 × 150	2 × 250
Included data analysis	Local Run Manager		Local Run Manager			Paired DRAGEN server		

a. In Research (RUO) mode, MiSeqDx, NextSeq 550Dx, and NovaSeq 6000Dx instruments have the same performance specifications as the MiSeq, NextSeq 550, and NovaSeq 6000 Systems, respectively.
b. Refer to package insert for assay-dependent specifications.


NovaSeq™ 6000Dx

Connecting data to insights

With an Illumina system, efficiencies are built in. Our comprehensive software solutions help reduce bioinformatics bottlenecks and streamline your genomics workflow. Whether you're just getting started, or you're in rapid scale mode, Illumina Connected Software†† unlocks the power of your data in research applications spanning oncology, rare disease, and infectious disease.

Integrated with our sequencing systems, Illumina Connected Software supports genomic and clinical researchers from primary to tertiary analysis, optimizes lab and sample management, and accurately calls genetic variations. Balancing approachability with customization, Illumina Connected Software enables insights for single-sample or population-wide studies.

Meeting you where your data are, Illumina offers solutions for both local and cloud analysis. We are committed to relentless innovation, creating new bioinformatics technologies that expand access to genomics for all.

†† Learn more about Illumina Connected Software, illumina.com/products/by-type/informatics-products.html.

Proven accuracy

Highly accurate sequencing by synthesis (SBS) chemistry plus DRAGEN secondary analysis deliver award-winning germline and somatic variant calling.‡‡ With onboard DRAGEN analysis available on select instruments, users can gain significant cost savings for accurate, comprehensive, and efficient NGS analysis.

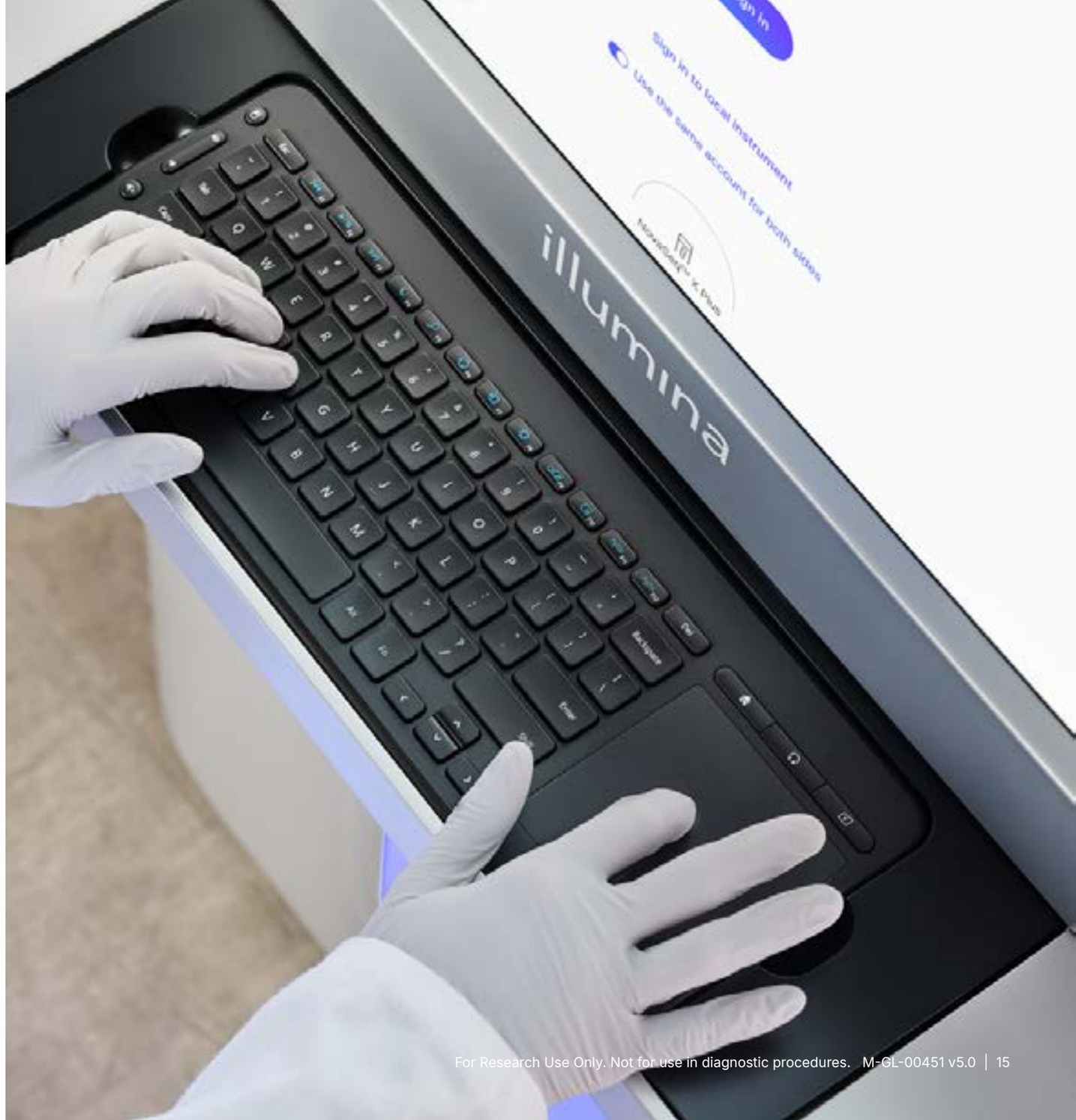
High standards for data privacy

To meet the most stringent security requirements, our software products are built with security and compliance at the core. Data sharing security and governance, audit trails with encryption, and controlled sharing ensure your data are kept safe and secure.

Trusted technology partners

Dedicated to your success, the Illumina Informatics Services team brings together bioinformaticians, data scientists, and designers to help you customize and optimize your analysis workflow and minimize your development burden.

‡‡ PrecisionFDA Truth Challenge V2, precision.fda.gov/challenges/10.



Support that never stops

For Illumina, innovation doesn’t stop at developing best-in-class systems. Our passion extends to your entire user experience. We support you every step of the way in your NGS journey and aspirations.

STEP 1: Let’s find the right solution for you

It’s all about your lab’s needs now and in the future. We help you determine the right system. Then our in-person trainings and online tools help you discover how to fully expand your research.

STEP 2: Setting up

From library prep to informatics, we’ll help you achieve operational excellence, with an optimized workflow that will help you run your lab in a cost- and time-efficient manner.

STEP 3: Maintenance and support

As a global company with 25 years of experience, we not only get you started, we keep your lab running smoothly. We have the infrastructure, teams, and expertise to give you consistent, superior service.

Maximum productivity

Illumina Proactive is enhanced service and support you’ll come to rely on. Connect your instruments to your free, customized MyIllumina dashboard for instrument analysis and troubleshooting. You’ll receive real-time updates on your run progress and instrument utilization. Proactive risk detection by our support team can minimize unplanned downtime and increase sample success.

You’re changing the world. We’re right beside you.

Illumina strives to be the best partner possible, providing groundbreaking genomics innovations, ultimate user experience, and exceptional customer service. With a global presence, you’ll receive the support you need to facilitate your success. Wherever you are in the world, we provide the talent, resources, and solutions to fuel your science and maximize your discovery power.

Our goal is to apply emerging technologies to the analysis of genetic variation and function, making studies possible that were unimaginable just a few years ago.

And this is precisely the power of Illumina—and you.

Every innovation has led to today—the genome era.

We can’t wait to see where we all go next.

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We are always available for questions, insights, and conversation.
Visit us at illumina.com.

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