An Ultra-High Throughput Sequencer

DNBSEQ-T20×2

MGI

Say Hello to

DNBSEQ-T20×2

An Ultra-High Throughput Sequencer

DNBSEQ-T20×2 is a fully automated sequencer comprising all components of a genetic sequencer integrated by robotics to process six slides per run. DNBSEQ-T20×2 achieves remarkable throughput far greater than existing "high-throughput" sequencers, and can drive down sequencing cost to a sub $100 price per genome as a trailblazer.

>50,000 WGS*/Year

*30×Genome Coverage

Throughput Improvement

Up to 10.5×

PE100

42 Tb
output per run

4 Tb

Up to 4.5×

PE150*

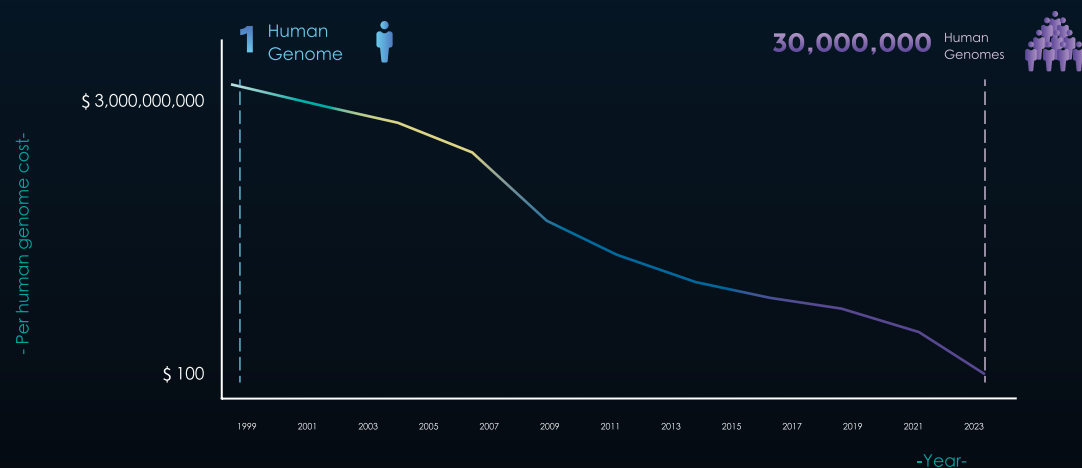72 Tb
output per run

16 Tb

*PE150 is estimated to be released in 2023 Q3.

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Trailblazing Path To
Sub Hundred-dollar Genome

DNBSEQ-T20×2 is designed to meet the most challenging sequencing scenarios. It aims to empower large population genome projects around the world, and revolutionize healthcare with OMICS technologies. DNBSEQ-T20×2 will be **the perfect choice** to bring sequencing efficiency and scale to the next level.

1 Human Genome

30,000,000 Human Genomes

$ 3,000,000,000

$ 100

- Per human genome cost-

1999 2001 2003 2005 2007 2009 2011 2013 2015 2017 2019 2021 2023

-Year-

Product Components

Biochemical Reaction Module
Performs biochemical reactions on slides

Reagent Module
Storages unreacted regaents

6-axis Robotic Arm
Transfers slides between
different modules

Storage Module
Storages slides and
reacted regaents

Power Module
Supplies electricity and
compressed air power

Optical Imaging Module 1
Captures labeled fluorescent signal

Optical Control Module 1
Controls each component of optical imaging
module 2 and transters fluorescent signal to CAL file

BIT Module
Generates FASTQ data or performs
advanced bioinformatics analysis

Optical Control Module 2
Controls each component of optical imaging
module 2 and transters fluorescent signal to CAL file

Optical Imaging Module 2
Captures labeled fluorescent signal

Six Super-sized Slides
Provide Excellent Performance

DNBSEQ-T20×2 supports different sequencing applications to be run on different slides at the same time. Glass covers have been removed from the DNBSEQ-T20×2 slides to facilitate the dip-immersion mode for biochemistry reactions. This allows reagents to be re-circulated for reuse, while achieving high uniformity and stability of reactions.

Slides

| PE100 | 35 B | 42 Tb | 2.5 d[++] | ≥85 |
Read Length	Effective Reads/Slide	Data Output/Run	Sequencing Time	Q30 (%)[+]
PE150*	40 B	72 Tb	3.5 d[++]	≥80
Read Length	Effective Reads/Slide	Data Output/Run	Sequencing Time	Q30 (%)[+]

*PE150 is estimated to be released in 2023 Q3.
[+]The percentage of base above Q30 is the average of an internal standard library over the entire run.
The actual performance is affected by factors such as sample type, library quality and type, and insert fragment length.
[++]The run time includes slide loading, sequencing, and generation of Cal. file. Cal. file is a binary file format generated by DNBSEQ™ platform basecall software.

×6
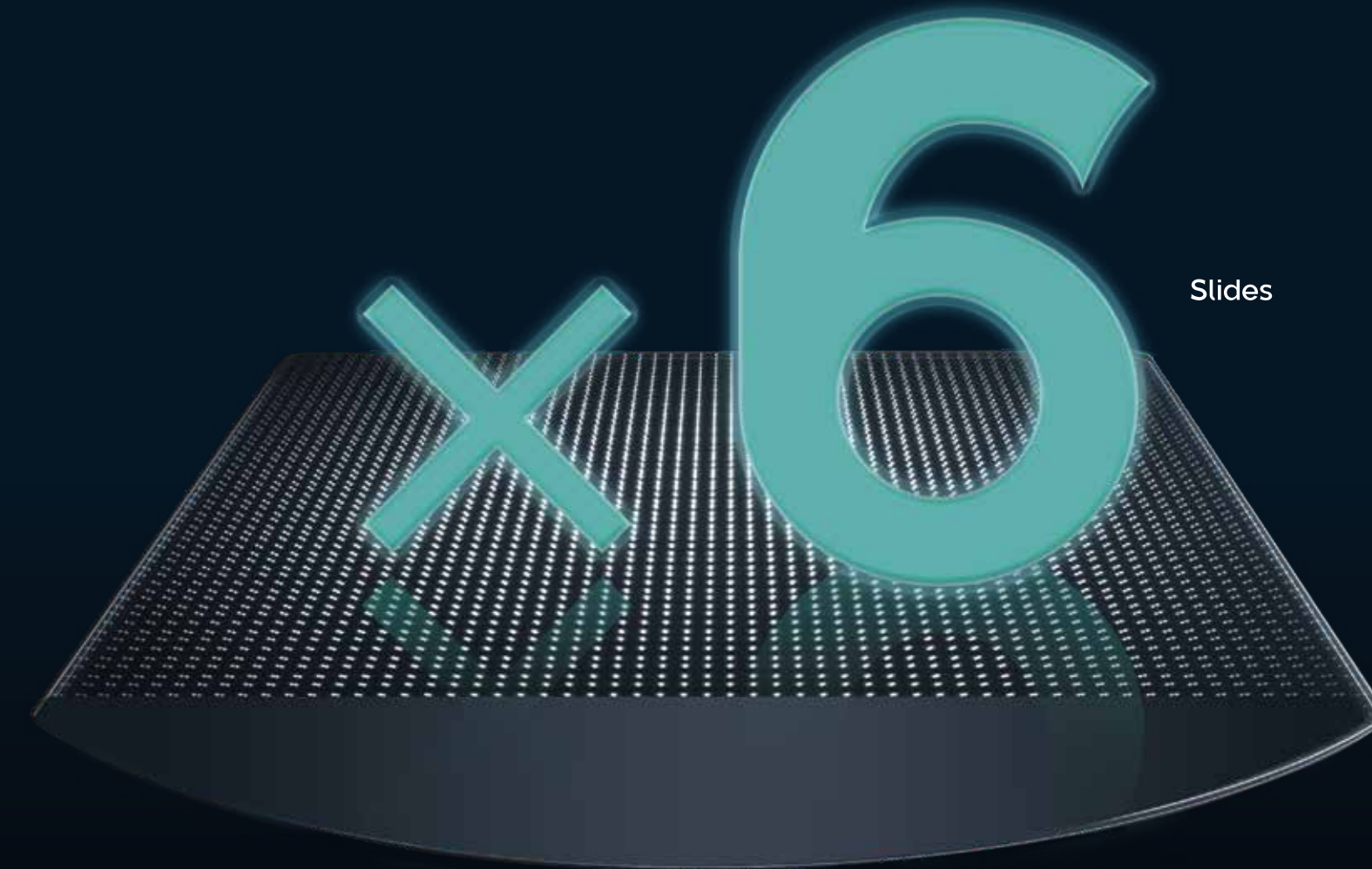
Innovative
Dip-Immersion Biochemistry

DNBSEQ-T20×2 adopts an innovative dip-immersion biochemical technology. In contrast to the flow cell, the dip-immersion biochemical reaction is carried out by consecutively immersing multiple sequencing slides (no cover) in the same reagent container, enabling reagent reuse and uniform biochemistry on wafer-sized sequencing arrays.

Powered by DNBSEQ™

Leveraging the core advantages of **DNBSEQ™** combined with highly accurate base-calling and copy number correction algorithms, DNBSEQ-T20×2 achieves outstanding sequencing performance and exceptional data quality with low duplication rates and ultra-high effective data output.

↑ INCREASED ACCURACY

↓ DECREASED DUPLICATES

↓ REDUCED INDEX HOPPING

DNA single strand circularization

DNB Making

Patterned Array

DNB Loading (DNA nanoballs)

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08
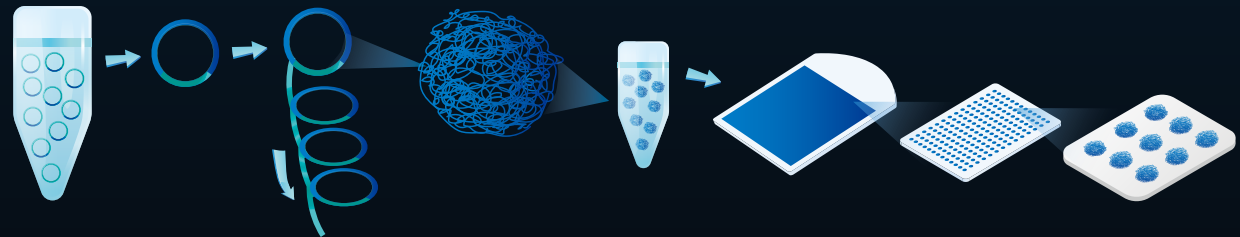
Shape The Future Of Ultra-High Throughput Sequencing

DNBSEQ-T20×2 covers all high-throughput sequencing needs in scientific research and clinical research, including: WGS, WGBS, stLFR, single-cell sequencing, stereo-seq, and etc.

*PE150 is estimated to be released in 2023 Q3.

Estimated Sample Throughput
For Key Applications

Application	Sample Throughput	Reads/Sample	Data/Sample	Depth/Sample	Application filed
WGS	~ 336/Run	500 M	100 Gb	30X	Scientific research
cWGS	~ 240/Run	700 M	140Gb	40X	Clinical research
stLFR WGS	~ 168/Run	750 M	150 Gb	30X	Scientific research
WGBS	~ 168/Run	550 M	110 Gb	30X	Scientific research
Single-cell Sequencing	~ 192/Run	800 M 10,000 cells/sample	/	/	Scientific research
Stereo-seq	~ 144/Run	1000 M	/	/	Scientific research

*All sample throughputs are estimated by PE100.

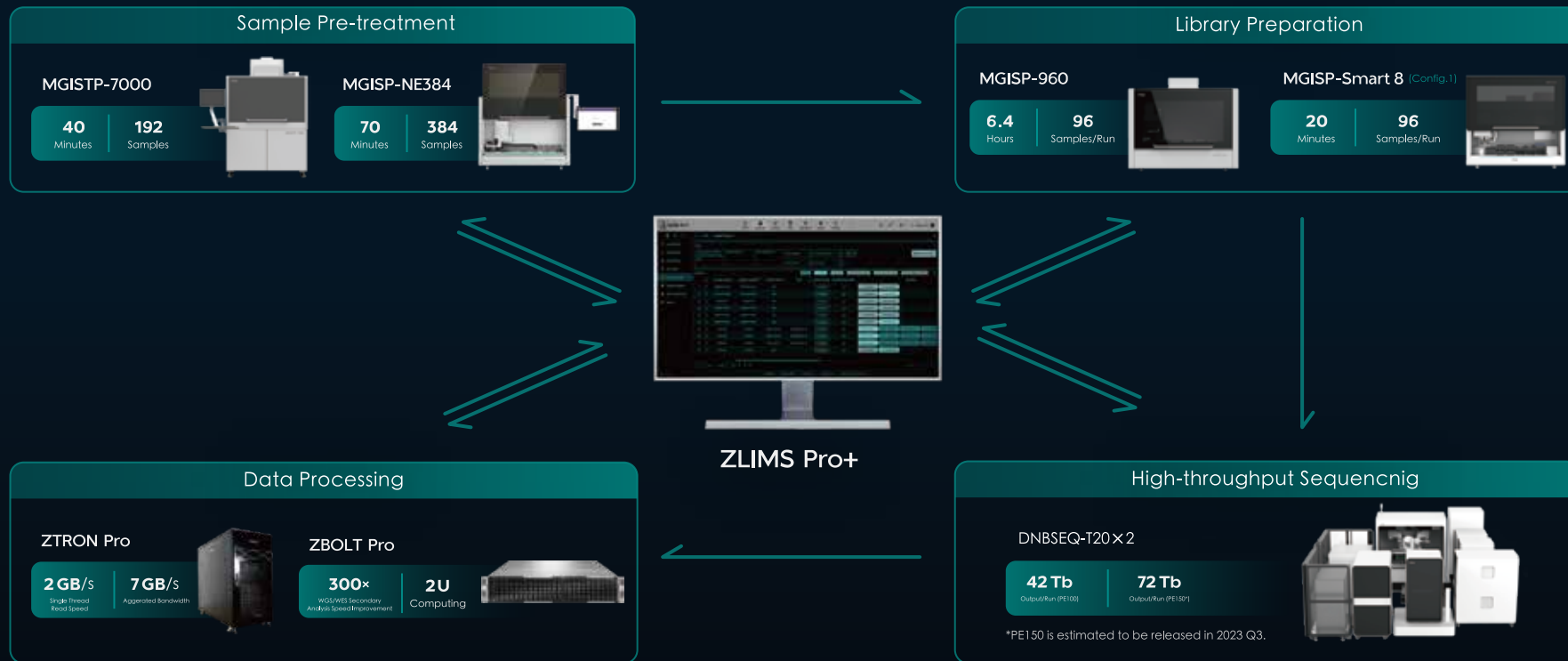**The stLFR Library Prep Kit is Only for Sale in the United States, and for Research Use Only.

Start Sequencing Immediately

We offer *a complete package* with the DNBSEQ-T20×2, including sample preparation reagents and equipment, automated library preparation systems, and ultra-high throughput sequencers. In addition, a range of tools such as massive data management systems and processing modules are available to users.

The One-stop Package

Sample Pre-treatment

MGISTP-7000

40	192
Minutes	Samples

MGISP-NE384

70	384
Minutes	Samples

Library Preparation

MGISP-960

6.4	96
Hours	Samples/Run

MGISP-Smart 8 (Config.1)

20	96
Minutes	Samples/Run

ZLIMS Pro+

Data Processing

ZTRON Pro

2 GB/s	7 GB/s
Single Thread Read Speed	Aggerated Bandwidth

ZBOLT Pro

300×	2U
WGS/WES Secondary Analysis Speed Improvement	Computing

High-throughput Sequencnig

DNBSEQ-T20×2

42 Tb	72 Tb
Output/Run (PE100)	Output/Run (PE150*)

*PE150 is estimated to be released in 2023 Q3.

Full Portfolio of DNBSEQ™ Platform

E Series	G Series	T Series

DNBSEQ-E25

Effective Reads/Flow Cell	25 M
Max Read Length	PE150
Data Output/Run	2.5-7.5 Gb
Run Time	5-20 h

DNBSEQ-G99

Effective Reads/Flow Cell	80 M
Max Read Length	PE 150
Data Output/Run	8-48 Gb
Run Time	5-12 h

DNBSEQ-G50

Effective Reads/Flow Cell	100M, 500 M
Max Read Length	PE150
Data Output/Run	10-150 Gb
Run Time	10-28 h / 9-40 h

DNBSEQ-G400

Effective Reads/Flow Cell	300M, 550M 1500-1800M
Max Read Length	PE300
Data Output/Run	1440 Gb
Run Time	13-98 h / 14-109 h

DNBSEQ-T7

Effective Reads/Flow Cell	5000 M
Max Read Length	PE150
Data Output/Run	1-6 Tb
Run Time	~24 h

DNBSEQ-T20×2

Effective Reads/Slide	35-40 B
Max Read Length	PE150
Data Output/Run	72 Tb
Run Time	60-80 h

Throughput Per Day (Gb)

1   10   50   120   300   1000   1500   6000   20000

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Hardware Specification

Parameter	Specification
Models	Genetic Sequencer DNBSEQ-T20×2RS
Dimensions	Biochemical Reaction Module: 1750 mm (L)* 1220 mm (W) * 2000 mm (H) DNBSEQ-T20×2RS: 4200 mm (L)* 4800 mm (W) * 2000 mm (H)
Net Weight (without BIT module)	DNBSEQ-T20×2RS: ~2743 kg
Touch Screen	Touch Screen Type: LCD Touch Screen Size: 21.5 inch Touch Screen Resolution: 1920×1080
Power	Rated Voltage: 3~, 380/400 V Rated Frequency: 50 Hz Rated Power: 20000 VA
Operating Environment Requirements	Temperature: 19 ℃~22 ℃ Relative Humidity: 30% RH~70% RH Atmospheric Pressure: 90 kPa~106 kPa
Shipping/Stroage Environment Requirements	Temperature: 15 ℃~30 ℃ Relative Humidity: 30% RH~70% RH Atmospheric Pressure: 90 kPa~106 kPa

*The maximum sound pressure of DNBSEQ-T20×2 is 75 dB (A).

**The shell protection grade of DNBSEQ-T20×2 is IPX0.

Ordering Information

Cat.No.	Product Name
900-000544-00	Genetic Sequencer DNBSEQ-T20×2RS (CHN-RUO)
900-000543-00	Genetic Sequencer DNBSEQ-T20×2RS (CE-RUO)
900-000667-00	Genetic Sequencer DNBSEQ-T20×2RS (US-RUO)
900-000546-00	DNB Loader MGIDL-T20ARS (CHN-RUO)
900-000546-00	DNB Loader MGIDL-T20ARS (CE-RUO)
900-000668-00	DNB Loader MGIDL-T20ARS (US-RUO)
940-000350-00	DNBSEQ-T20x2RS High-throughput Sequencing Set

* Unless otherwise informed, StandardMPS and CoolMPS sequencing reagents, and sequencers for use with such reagents are not available in Germany, Spain, UK, Sweden, Belgium, Italy, Finland, Czech Republic, Switzerland, Portugal, Austria and Romania. Unless otherwise informed, StandardMPS sequencing reagents, and sequencers for use with such reagents are not available in Hong Kong.

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