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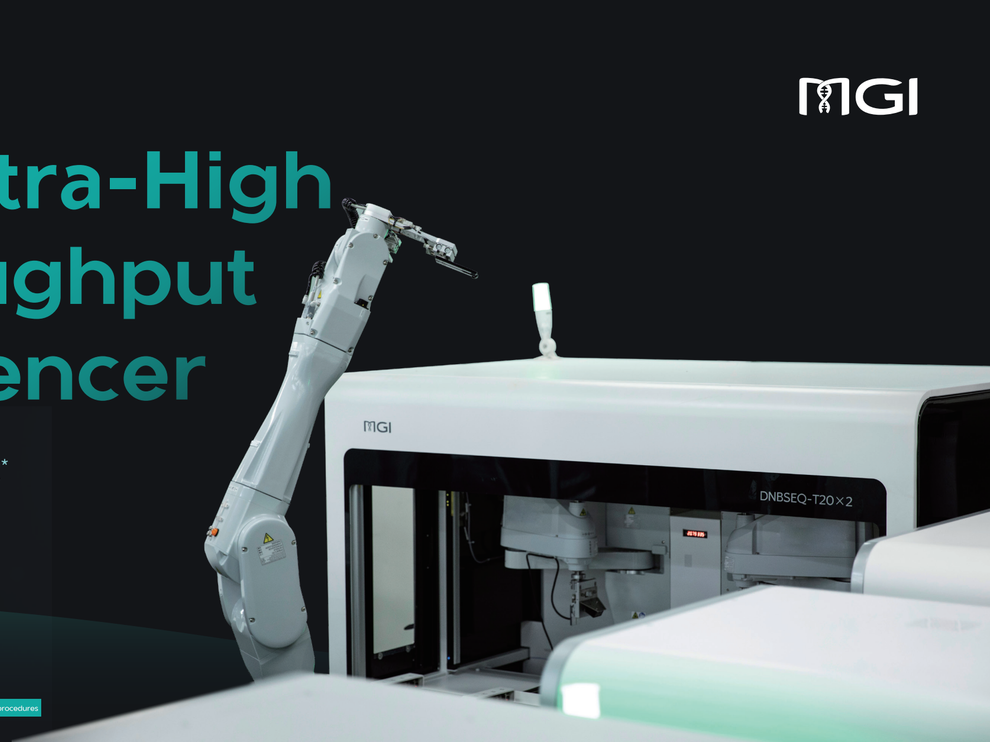
An Ultra-High Throughput Sequencer

DNBSEQ-T20×2*



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Say Hello to
DNBSEQ-T20×2
MGI
DNBSEQ-T20×2
2023
R&D
100
WINNER
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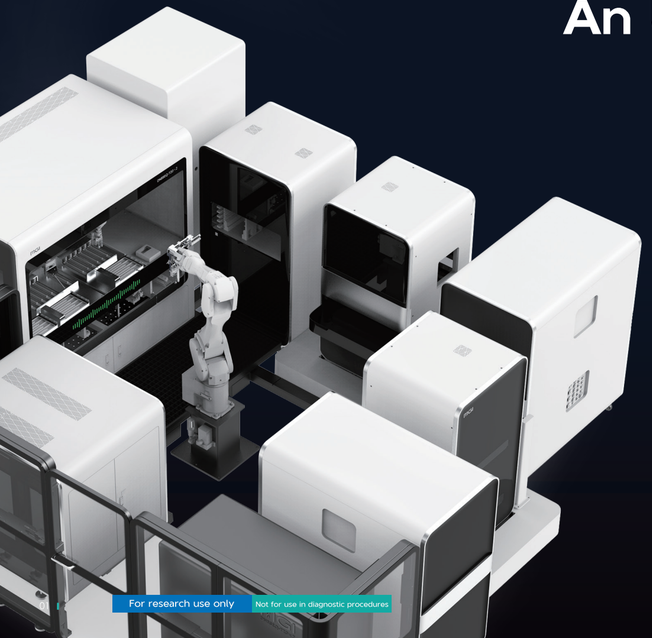


An Ultra-High Throughput Sequencer

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 12×

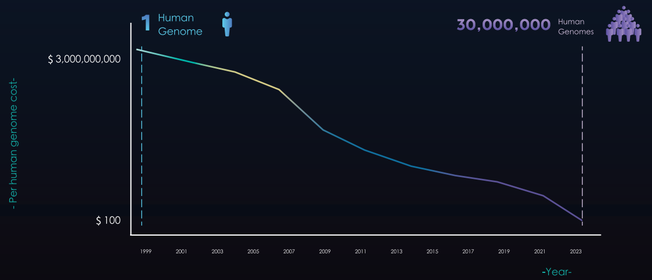
PE100

Up to 4.5×

PE150*

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.



Product Components

Biochemical Reaction Module
Performs biochemical reactions on slides

Reagent Module
Storages unreacted reagents

Storage Module
Storages slides and reacted reagents

Optical Imaging Module 1
Captures labeled fluorescent signal

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

6-axis Robotic Arm
Transfers slides between different modules

Power Module
Supplies electricity and compressed air power

BIT Module
Generates FASTQ data or performs advanced bioinformatics analysis

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

Optical Imaging Module 2
Captures labeled fluorescent signal

MGIDL-T20A

The MGIDL-T20A is a required auxiliary product for the DNBSEQ-T20×2. It is intended for automatically loading the prepared DNBs (DNA Nanoballs) and sequencing. Additonly, after read1 sequencing is completed in PE (paired-end) sequencing, it can perform MDA (multiple displacement amplification) for read2 sequencing.

Dimension 1400 mm (L) × 865 mm (W) × 1670 mm (H)

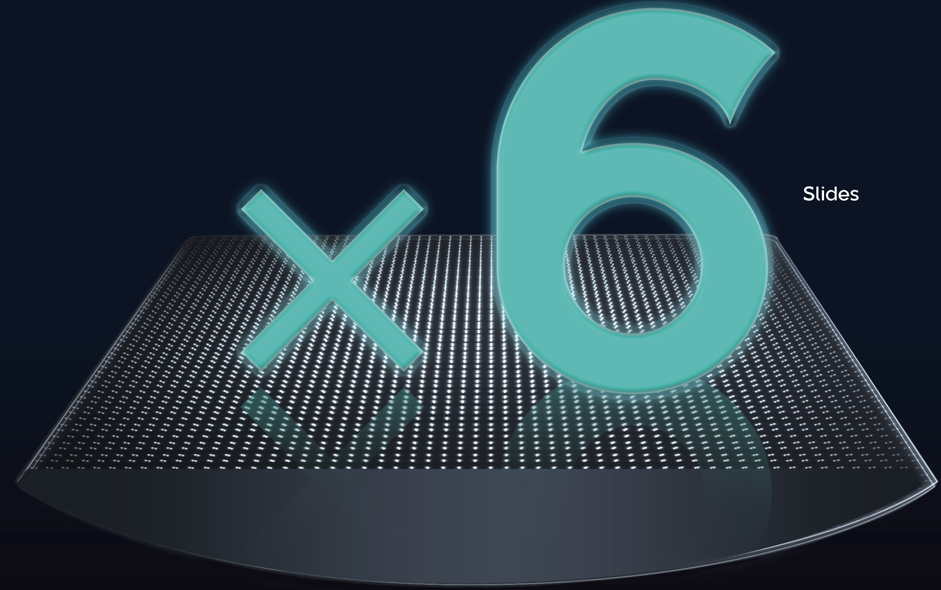
Net Weight about 550 kg

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.

PE100 Read Length	40 B Effective Reads/Slide	48 Tb Data Output/Run	2.5 d ++ Sequencing Time	⩾85 Q30 (%)*
PE150 Read Length	40 B Effective Reads/Slide	72 Tb Data Output/Run	3.5 d ++ Sequencing Time	⩾85 Q30 (%)*

*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.



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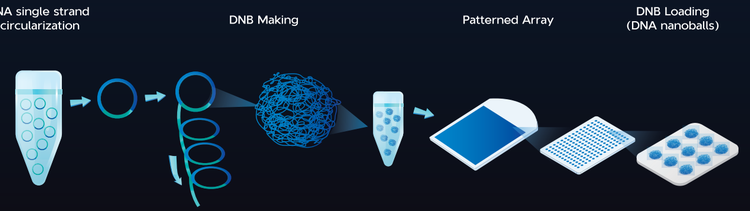
Innovative Dip-Immersion Biochemistry

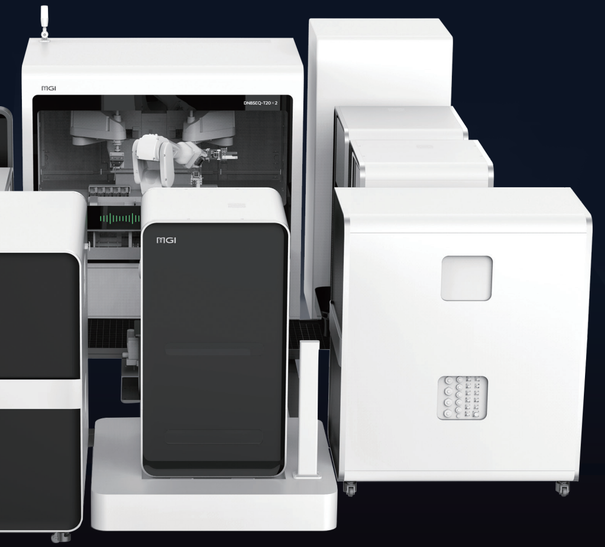
DNBSEQ-T20×2 adopts an innovative **dip-immersion biochemical technology**. In contrast to the flow cell, the dip-immersion biochemical reaction is carried out by consecutively immersing multiple sequencing slides (no cover) in the same reagent container, enabling reagent reuse and uniform biochemistry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





Shape The Future Of Ultra-High Throughput Sequencing

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

Estimated Sample Throughput For Key Applications

Application	Read Length	Reads/Sample	Data/Sample	Depth/Sample	Sample/Slide	Sample/run
WGS	PE100	500 M	100G	30×	72	432
		700 M	140G	40×	56	336
WGS	PE150	334M	100G	30×	96	576
		467M	140G	40×	80	480
Single-cell	PE100	500 M (10000 cells/sample)	/	/	60	360
Spatial Omics	PE100	1000 M	/	/	24	144

Validated executable hybrid pooling solution: WGS+WES+RNA

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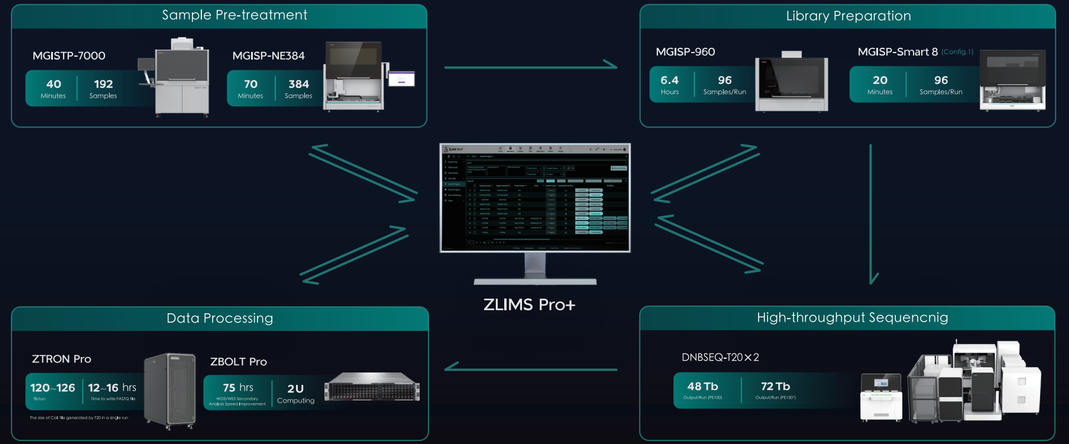
Start Sequencing Immediately

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



Full Portfolio of DNBSEQ™ Platform

E Series	G Series	T Series

	DNBSEQ-E25*	DNBSEQ-G99*	DNBSEQ-G50*	DNBSEQ-G400*	DNBSEQ-T7*	DNBSEQ-T20×2*
Effective Reads/Flow Cell	25 M	80 M	100M, 500 M	300 M, 550 M 1500–1800 M	5800 M	
Effective Reads/Slide						40 B
Max Read Length	PE150	PE300	PE150	PE300	PE150	PE150
Data Output/Run	2.5–7.5 Gb	8–96 Gb	10–150 Gb	1440 Gb	1–7 Tb	72 Tb
Run Time	5–20 h	5–30 h	10–28 h 7–40 h	13–98 h 14–109 h	16–24 h	60–80 h

1 10 50 120 300 1000 1500 6000 20000 Throughput Per Day (Gb)

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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: ~3700 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)*
900-000549-00	DNB Loader MGIDL-T20ARS (CE-RUO)*
900-000668-00	DNB Loader DL-T20ARS (US-RUO)*
940-001854-00	DNBSEQ-T20×2RS High-throughput Sequencing Set V2.0（FCL PE100）
940-000351-00	DNBSEQ-T20×2RS High-throughput Sequencing Set（FCL PE150）

*Unless otherwise informed, this StandardMPS sequencing reagent is not available in Germany, UK, Sweden, and Switzerland.
*All Products labled solelly for research use only which means it should not be used for clinical diagnosis.