Ordering Information			
Product	Lab Setup Choice	Supplier	Part No.
MGIDL-T7RS	Essential	MGI	900-000134-00
DNBSEQ-T7RS	Essential	MGI	900-000128-00
MGISP-100RS	Optional	MGI	900-000051-00
MGISP-960RS	Optional	MGI	900-000152-00
MegaBOLT	Optional	MGI	510-000306-00
ZLIMS	Optional	MGI	970-000004-00
Server	Optional	/	It is recommended to have capacity≥1Pb, which can store at least 2 months' total data generation
UPS	Optional	/	It is recommended to have Rated Power≥5000VA

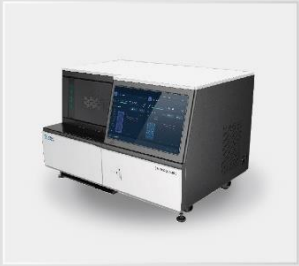
For more ordering information, please contact your local sales representative.

Sequencing platform options from benchtop to production throughput

DNBSEQ-G50

- Integrated solution for small scale genome sequencing

DNBSEQ-G400



- A core platform for large and medium scale genome sequencing, flexible and stable

DNBSEQ-T7

- An ultra-high throughput sequencer in the world and the best choice for large-scale genome sequencing

* It is also called MGISEQ-200 and MGISEQ-2000 in China and some other overseas markets.

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Revision: 2019.10

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https://twitter.com/MGI_BGI

website

MGI 华大智造

GENETIC SEQUENCER

DNBSEQ-T7

Turbocharge your sequencing
high-speed, high flexibility and ultra-high throughput

High-speed

24 HOURS for
PE150 sequencing

High-flexibility

4 FLOWCELLS, PE150 and
PE100 at the same time

Ultra-high Throughput

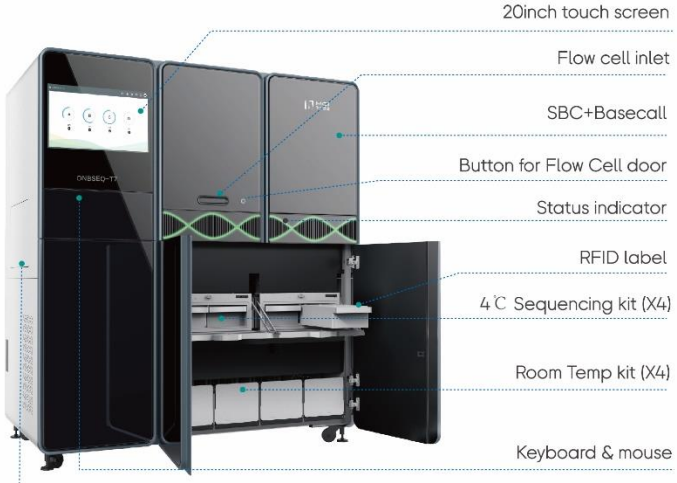
Up to 6 Tb/DAY,
High quality data 24/7

INTRODUCTION

DNBSEQ-T7

DNBSEQ-T7 can generate 1-6Tb of high quality data per day, for a wide range of applications including Whole Genome Sequencing, Deep Exome Sequencing, Epigenome Sequencing, Transcriptome Sequencing, and targeted panel projects.

Powered by DNBSEQ™ Technology, DNBSEQ-T7 makes sequencing more efficient and productive with advances in biochemical, fluidics, and optical systems.



MGIDL-T7

MGIDL-T7 is an essential auxiliary product for DNBSEQ-T7. The device is used to prepare sequencing Flow Cells by loading the prepared DNB (DNA Nanoball) and/or reagent to a Flow Cell. It loads one or two Flow Cells in less than 2 hours.

Dimensions

430 mm * 750 mm * 750 mm

Net Weight

81 kg

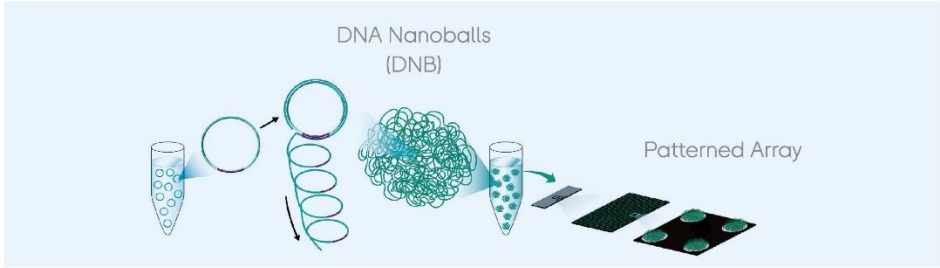
DNBSEQ-T7 Specifications

Model	DNBSEQ-T7	
Flow Cells /run	4	
Lanes/Flow Cel	1	
Max reads/FlowCell*	5000M	
Read lengths	PE100	PE150
Data Output	1~4Tb	1.5~6Tb
Data QualityQ30**	>85%	>80%
Run Time***	<20hrs	<24hrs

* The maximum number of effective reads are based on the sequencing of an internal standard library. Actual output may vary depending on sample type and library preparation method.

** 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 insert fragment length.

*** Run time includes Flow Cell loading, sequencing, and base calling.



MGI DNBSEQ™ Technology Highlights

INCREASED ACCURACY

No PCR amplification required. Our unique Rolling Circle Replication (RCR) technology employed in DNBSEQ™ library preparation eliminate errors associated with PCR. Only the original template DNA is used to generate copies and therefore amplification errors do not accumulate, contributing to greater accuracy for detection of significant mutations such as INDELs and SNPs.

DECREASED DUPLICATES

Optimized Patterned Array ensures that only a single DNB is attached at each spot, which results in greater saturation of DNB on the Flow Cell with unprecedented uniformity. This enables an industry-leading detection capability and an average duplicate rate below 3%.

REDUCED INDEX HOPPING

MGI platform's unique library preparation and RCR amplification results much in lower index hopping rates compared with other platforms, at a rate of just 0.0001%~0.0004%.

Whole Genome Sequencing (WGS) Data Performance

- **Sample** Human Cell Line
- **Kit** MGIEasy PCR-free DNA Library Prep Set
- **Sequencing** High-throughput Sequencing Set (PE100)
- **Data analysis** MegaBOLT

Sample	NA12878	NA24385	NA24631	NA24694
Mapping rate (%)	98.33	98.46	98.39	98.44
Mismatch rate (%)	0.95	0.87	0.92	0.9
Average sequencing depth (X)	42.35	42.4	42.45	42.05
Coverage (%)	99.33	99.95	99.93	99.93
Coverage at least 4X (%)	99.13	99.88	99.86	99.86
Coverage at least 10X (%)	98.94	99.63	99.53	99.47
SNP_Precision	0.9994	0.9992	0.9989	0.9991
SNP_Sensitivity	0.9911	0.9904	0.9917	0.9923
INDEL_Precision	0.9937	0.9951	0.9949	0.9947
INDEL_Sensitivity	0.986	0.9856	0.9856	0.9857

Sample Throughput Guidance for Key Applications*

Flow Cells per run	1	2	3	4
Human Genomes per Run	10～15	20～30	30～45	40～60
Exomes per Run	64～100	128～200	192～300	256～400
Transcriptomes per Run	～100	～200	～300	～400

* Human Genomes assumes > 100 Gb of data per sample to achieve 30× genome coverage. Exome assumes ~15Gb/100×. Transcriptomes assume ≥ 50M reads. Throughput may vary based on library preparation kit used.

WGS Total Solution

MGI provides a total solution for whole genome sequencing. DNBSEQ-T7 is compatible with a variety of products covering the whole process from Sample Pretreatment and Library Preparation, DNB loading, Sequencing and Data Analysis（MegaBOLT）, making WGS based on DNBSEQ-T7 easy and accessible.

Zebra LIMS (Laboratory Information Management System) enables real-time sample tracking throughout the workflow, offering an end-to-end solution from sample to sequencing report.

ZLIMS

Apparatus		MGISP-960	MGISP-100	MGIDL-T7	DNBSEQ-T7	MegaBOLT	ZLIMS	Server	UPS
Setup Case 1	No.	1	1	1	1	2	1	Optional	
Setup Case 2	No.	2	1	3	3	6	1		
Summary	**Setup Case 1** can process 60 samples of human 30x WGS per run, with an annual processing capacity of up to 21,600 samples; **Setup Case 2** can process 180 samples of human 30x WGS per run ,with an annual processing capacity of up to 64,800 samples.								

MGISP series

MGISP series include MGISP-100 and MGISP-960, The throughput is 16 samples /run and 96 samples /run respectively, which can perform nucleic acids extraction and library preparation.

MGIDL-T7

MGIDL-T7 is an essential auxiliary product for DNBSEQ-T7, it loads DNB and/or reagents onto the slide to complete the preparation of sequencing slide.

DNBSEQ-T7

Sequencing operation contains two main steps. Including manual operation and automatic operation.

Manual operation: (*user login and choose sequencing mode) load flowcell- place reagent kits-click sequence

Automatic operation : automatic sequencing-automatic wash-automatic dispose of flowcells

MANUAL OPERATION

User Login and Choose Sequencing Mode

AUTOMATIC WORKFLOW

Storage server

It is recommended to have capacity>1Pb, which stores at least 2 months total data generation.

MegaBOLT

WFQ and Bioinformatics Analysis Server

MegaBOLT bioinformatics analysis accelerator is an MGI self-developed and NGS-concentrated hardware accelerating system for bioinformatics analysis.

STEP1

Nucleic Acid Extraction and Library Preparation

STEP2

Sequencing

STEP3

Bioinformatics analysis

DNBSEQ-T7 Configurations

Model*	Model	Intended Market
	DNBSEQ-T7	IVD
	DNBSEQ-T7RS	RUO
Dimensions	1656mm x 903mm x 1815mm	
Net Weight	~765Kg	
Power	Type	200~240V, 50/60Hz, 30A
	Rated Power	3000VA
Operating Environment Requirements**	Temperature	19~25℃, fluctuation < 2°C per hour
	Relative Humidity	30%RH ~ 80%RH, non-condensing
	Atmospheric Pressure	80kPa~106kPa
	Waterproof Rating	IPX0
	Altitude	Below 2000 meters
Floor bearing capacity***	≥650 Kg/m²	
Control Computer Configurations****	CPU	Intel CORE I7-7700 4Core*2 3.6GHz
	Internal Storage	16 GB RAM
	HDD	1TB
	SSD	128G
	Operating System	Windows 10
Bandwidth for Network Connection	300 MB/s	For local storage network uploads
	4000 MB/s	For Fastq computing uploads
	500 MB/s	For Data analysis uploads

* Only for model classification

** For indoor use only, the Flow Cell can be stored and transported at room temperature. No liquid medium id needed

*** Please install DNBSEQ-T7 above the bearing beam

**** Supporting the computer configurations and system updates

MGI Global Presence

Global Technical Support

The technical support team has a complete global coverage including technical services centers and multiple locations in major international regions to maximize customer satisfaction.

Multiple local technical support centers around the world provide timely and effective technical support and training.

Online technical support accessible worldwide, with a fully functioning call center (Toll-Free Hotline: 4000-966-988, 9:00-12:00,13:00-18:00, Beijing time, workday) and multi-language online training courses coming soon.

Global Instrument Service and Warranty Plans

Warehouses in Shenzhen, Wuhan, Qingdao, Tianjin, Hong Kong, Taipei, Bangkok (Asia-Pacific); Brisbane (Australia, Oceania); Riga (Latvia, Europe); and San Jose (the USA, Americas) are established to ensure sufficient supply of maintenance parts for major regions.

Free installation and system verification services (including the QC reagents and consumables) are provided to turn your investment into production quickly.

MGI is responsible for any manufacturing defects or faults on the system within the warranty. Warranty covers labor, parts and travel charges.

One Free instrument preventive maintenance provided with warranty, along with a variety of available extended warranty support plans.