Oxford Nanopore Technologies

MinION | GridION

Flexible, real-time, on-demand sequencing — in the lab or field

Ask bolder questions

Delivering any read length, ultra-rich datasets, and real-time insights, Oxford Nanopore sequencing answers the bigger, bolder research questions that you always wanted to ask. Welcome to sequencing without compromise.

Richer insights

Highly accurate genomic data that captures more types of genetic variation

Faster results

Near-sample, real-time workflows that don't require batching

Accessible and affordable

Scalability that enables every application

Make no compromises

What could you do with one MinION™ Flow Cell?

Compatible with MinION and GridION™ devices, MinION Flow Cells provide low-cost, scalable access to all the benefits of nanopore sequencing.

- Any read length — short to ultra long (20 bp to >4 Mb)
- Direct methylation detection with native DNA or RNA sequencing
- Multiplexed sequencing of up to 96 samples — with or without PCR

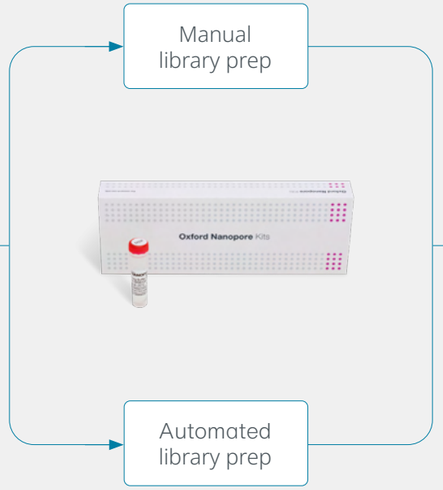
- 15–35 Gb gDNA reads (~25 kb read N50)
- 10–20 Gb ultra-long native DNA reads (>50 kb read N50)
- Wash and re-use for multiple successive libraries

Assembly | **SNPs & phasing** | **Structural variants** | **Methylation** | **Full-length transcripts**

View applications nanoporetech.com/applications

Streamlined sample prep, on-demand sequencing, and real-time analysis for rapid results

Prepare



- Rapid 10-minute (DNA) library prep and automatable kit formats
- Multiplex your samples with barcoding kits
- Scale according to your needs — same chemistry and kits used for all Oxford Nanopore sequencing devices
- Fully automate your entire sequencing workflow — from sample to answer — with ElysION™. Find out more at nanoporetech.com/elysion

nanoporetech.com/prepare

Sequence

MinION

GridION

- Any read length — short to ultra long: 20 bp to >4 Mb[1]
- Sequence anywhere with portable MinION — at the point of need, in the field or lab
- Run up to five independent flow cells with the benchtop GridION
- Perform real-time, on-device targeted sequencing via adaptive sampling
- Harness expanding platform capabilities through consumable and software upgrades

nanoporetech.com/sequence

Analyse

Scientist

EPI2ME™

- Preconfigured workflows
- No bioinformatics skills needed
- Run locally or in the cloud
- Choose between real-time or post-run analysis

Bioinformatician

Command-line tools

- Access the latest algorithms
- Open-source tools developed by Oxford Nanopore or Nanopore Community
- Run pre-configured EPI2ME workflows

- Real-time results for time-critical applications
- Discover EPI2ME for streamlined, best practice analysis pipelines
- User-controlled run time — stop sequencing when sufficient data generated, wash, and reuse flow cell
- Powerful GridION onboard compute alleviates the need for complex IT infrastructure

nanoporetech.com/analyse

1. Internal data generated using the Ultra-Long DNA Sequencing Kit.

MinION Mk1D

Your personal, portable DNA and RNA sequencer

A sequencer for everyone — empowering individual researchers, labs, and those new to DNA/RNA sequencing to perform in-house sequencing and take control of their timelines with a cost-effective, personal device. Weighing only 130 g and running off a laptop, MinION Mk1D generates tens of gigabases of real-time data in the field or lab.

Sample added to flow cell here

Sensor array with multiple nanopores for scaled-up sequencing

USB-C powered for fast data transfer; link to laptop or desktop computer to operate

Improved thermal tolerance for enhanced performance in the field

Indicator lights inform the user of run status and progress

Consumable flow cell where the biology and electronics come together for nanopore sequencing

Sensor chip works with custom ASIC for control and data acquisition

Specification

Weight	Size	Compatible with
130 g	W 55 mm | H 13 mm | D 125 mm	MinION Flow Cells

Order now store.nanoporetech.com

GridION

Self-contained, easily deployable DNA/RNA benchtop nanopore sequencer

A flexible, self-contained, benchtop nanopore sequencer, running up to five MinION Flow Cells that can respond to the needs of multiple users on demand, across varied applications. Integrated, high-performance data processing alleviates the need for complex IT infrastructure.

Sample added to flow cell here

Five MinION Flow Cells can be operated individually or together, suitable for research labs and service providers

Consumable flow cell where the biology and electronics come together for nanopore sequencing

Onboard data analysis offering real-time basecalling and adaptive sampling (on-device targeted sequencing)

Expand your sequencing capabilities with PromethION™ 2 Solo — run using GridION high-performance compute

Q

GridION Q, part of the locked-down Q-Line range of devices for applied applications, also available. Find out more at nanoporetech.com/q-line.

Specification

Weight	Size	Compatible with
14.4 kg	W 370 mm | H 220 mm | D 365 mm	MinION Flow Cells

Order now store.nanoporetech.com

Choose your purchase plan

	MinION	GridION
Device	1	1
Flow cells	5	
Sequencing kits	1	
Wash kits	1	
Control kit	1	
Support*	1 year	1 year

* Extended support packages available — visit store.nanoporetech.com for more information.

Order now store.nanoporetech.com

Streamlined library preparation

A comprehensive range of library preparation kits are available, including direct, amplification-free DNA and RNA approaches that minimise potential bias and retain base modification information. Multiplexing (barcoding) options allow multiple samples to be analysed in a single sequencing run, maximising data generation while minimising costs.

	DNA			RNA	
Kit	**Ligation**	**Rapid**	**PCR**	**Direct RNA**	**cDNA-PCR**
Prep time	60 min	10 min	15 min + PCR	135 min	225 min + PCR
Input	~1 µg gDNA or 100–200 fmol amplicons	~200 ng gDNA or 50 ng for amplicons	1–5 ng gDNA	300 ng poly(A)+ RNA or 1 µg total RNA	10 ng poly(A)+ RNA or 500 ng total RNA
PCR required			✓		✓
Multiplexing	✓	✓	✓	In development	✓
Output	●●●	●●○	●●○	●○○	●●○
Adaptive sampling	✓	✓	✓	In development	In development
Methylation included	✓	✓		✓	

Also available

- Ultra-Long DNA Sequencing Kit — optimised for ultra-long DNA fragments and reads
- Application-specific library preparation kits (e.g. SARS-CoV-2 and 16S sequencing)
- Automatable workflows

View video tutorials, protocols, and more on the Nanopore Community: **nanoporetech.com/support**

More information nanoporetech.com/prepare

Supporting your research at every step

In addition to the support included in your purchase plan and extensive online resources in the Nanopore Community, we offer personalised training courses to ensure successful optimisation of your nanopore sequencing projects.

	MinION Rapid Starter Training	GridION Advanced Training
Duration	2 days	2.5 days
Location	Online	On-site
Number of participants	Up to 2	Up to 4
Provided consumables	2 flow cells, 2 sequencing kits	6 flow cells, 2 sequencing kits
User samples	1x control + 1x user sample	1x control + ≤4x user samples
Content	The essentials of nanopore sequencing — from planning your experiment through to sequencing and an introduction to data analysis.	

More information nanoporetech.com/services

Intuitive analysis with EPI2ME

The EPI2ME desktop application makes powerful genomic data analysis accessible to all scientists, regardless of bioinformatics expertise. Using an intuitive interface, users can navigate a growing range of open-source, best practice workflows that can be run on an Oxford Nanopore sequencing device*, laptop, desktop computer, cluster, or cloud service.

A rapidly growing range of workflows are available, including:

- Plasmid validation
- Adeno-associated virus verification
- Pathogen analysis: SARS-CoV-2, influenza, mpox, *Mycobacterium tuberculosis*
- Metagenomic species ID
- 16S-based microbial ID
- Antimicrobial resistance profiling
- Human variation: SVs, SNVs, and methylation — including targeted approaches
- Transcriptomics: differential gene expression and transcript usage

* GridION or PromethION devices with integrated compute only.

More information nanoporetech.com/analyse

Product specifications

MinION Mk1D device

- One flow cell position
- Up to 72-hour run time

Weight	Dimensions
130 g	W 55 mm | H 13 mm | D 125 mm

GridION device*

- Up to five individually addressable flow cells
- Up to 72-hour run time
- GPU-enabled real-time basecalling
- 7 TB SSD data storage
- 64 GB RAM
- Preloaded with Ubuntu OS and MinKNOW™

Weight	Dimensions
14.4 kg	W 370 mm | H 220 mm | D 365 mm

MinION Flow Cell

Used for MinION and GridION devices

- Up to 72-hour run time
- Typical data output: 15–35 Gb
- Suitable applications include low-pass large genomes (e.g. human), whole prokaryotic genomes, metagenomics, targeted sequencing, large transcriptomes (cDNA), and small transcriptomes (direct RNA)
- Choose between DNA and direct RNA flow cells

* Standard computer monitor, keyboard, and mouse required.

> "Nanopore sequencing technology is advancing at an unprecedented pace, promising a future where portable sequencing will be routine in surveillance and many other fields."

Jana Batovska
La Trobe University

> "[With the GridION] we can have more than one flow cell starting at a different time, running different samples, running the same sample and don't forget you can multiplex on them as well."

Dr Kim Judge
Wellcome Sanger Institute

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BR_1223(EN)_V4_29Jan2025