

Q Line

On-demand sequencing
for applied applications



What is Q-Line?

Rapid, end-to-end sequencing workflows for routine and applied applications

Launching with the GridION™ Q, the ISO 9001-qualified Q-Line sequencing portfolio from Oxford Nanopore Technologies delivers all of the benefits of real-time, on-demand nanopore sequencing in a locked-down, standardised format – enabling the implementation of routine workflows for in-house validated assays.

Benefit from:

- Proven, locked-down technology
- ISO 9001:2015 certified product manufacturing process
- Full operating software and consumable version support and supply for at least 12 months post purchase
- Clearly defined, visible product update pathway and implementation support

Rapid sequencing for routine and applied workflows

Locked-down Q-Line products are suitable for all routine, internally validated sequencing workflows and environments where rapid and consistent results are required.



Why nanopore sequencing?



Real-time analysis

- Analyse data as it is generated for faster access to actionable results
- Early sample insights and QC
- Enough data? Wash and reuse flow cell



Comprehensive genomic analysis

- Match read length to your application — from short to ultra-long
- Characterise structural variants, repeats, SNPs, methylation, and phasing in a single assay



Direct, amplification-free sequencing

- Retain and detect base modifications (e.g. methylation) alongside nucleotide sequence*
- Sequence native DNA not a copy
- Eliminate amplification bias



Scalable, on-demand sequencing

- Run five independent flow cells on GridION Q
- Sequence what you need, when you need it — no sample batching required
- Small footprint enables easy integration to existing workflows



Streamlined, automatable library prep

- Rapid library prep
- Automatable high-throughput workflows
- High sequencing yields from low input amounts
- Multiplex for even higher sample throughput



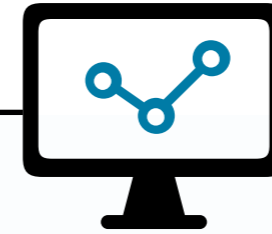
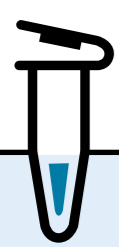
Proven technology

- ISO 9001:2015 manufacturing process
- Fixed and clear product upgrade path
- Full operating software and consumable support and supply for at least 12 months post purchase
- Rapid and comprehensive product support

* Modified base detection is enabled but, at time of print, not certified under the ISO 9001:2015 manufacturing process. See page 16 for more information.

Enhance your routine workflows

Streamlined sample prep, on-demand sequencing, and real-time analysis.



Real-time analysis

Nanopore sequencing data is provided in standard FASTQ and BAM file formats, suitable for immediate analysis using a range of downstream tools.*

Find out more: nanoporetech.com/analyse

Prepare

- Automatable, streamlined library prep
- Same chemistry and kits used for all nanopore devices — pilot new device, consumable, or protocol updates with any nanopore device before applying to your Q-Line workflow

Sequence

- Control each individual flow cell independently — run as many or as few as you wish and add more whilst others are running
- Sequence what you need, when you need it — no sample batching required
- Eliminate PCR bias through direct sequencing of native DNA

Analyse

- High-performance data processing capability with integrated basecall accelerator delivers real-time local analysis with no burden on existing IT infrastructure
- Real-time data streaming for immediate access to results*
- Stop sequencing as soon as result obtained, wash and reuse flow cell

* Downstream data analysis tools are not currently covered under the ISO 9001:2015 manufacturing process (see page 16).

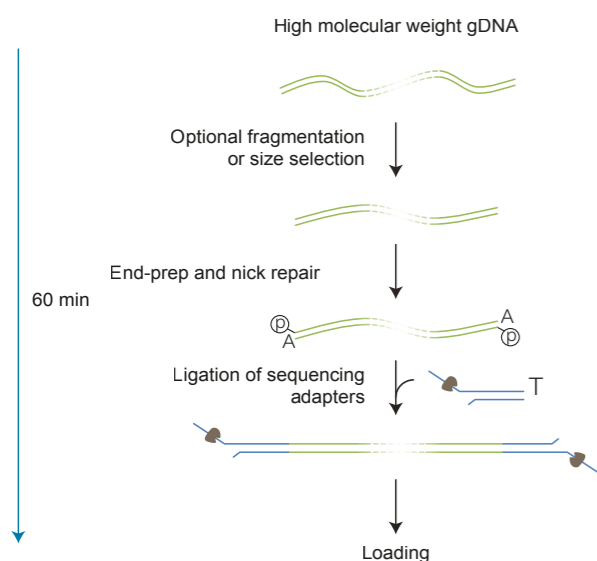
Potential applications:

- Complete, single-assay characterisation of human samples — including structural variants, repeats, SNPs, methylation, and phasing
- Real-time metagenomic and antimicrobial resistance characterisation
- Rapid species ID for food safety, outbreak surveillance, supply chain monitoring, and industrial diagnostics
- Developing veterinary diagnostic tests

Library preparation

For maximum yield

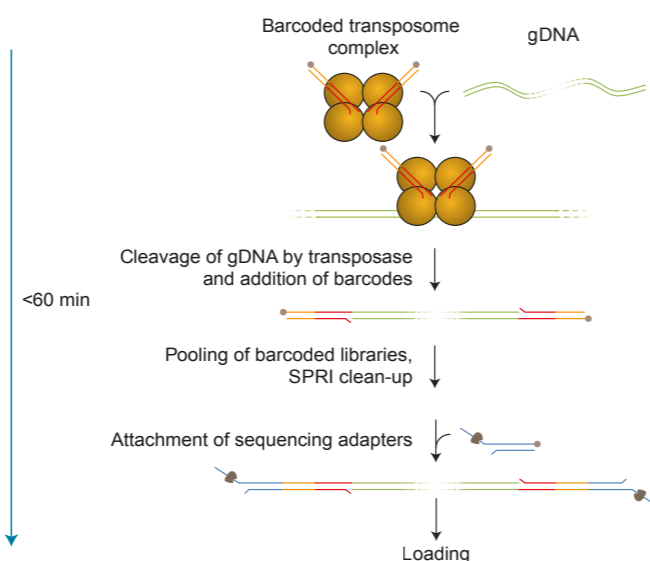
Ligation Sequencing Kit (Q-SQK-LSK109)



- DNA ends are repaired and dA-tailed
- Sequencing adapters are ligated onto the prepared ends
- Fragment lengths can be controlled by fragmentation or size selection

For minimal preparation time

Rapid Barcoding Kit 96 (Q-SQK-RBK110.96)



- The transposase simultaneously cleaves template molecules and attaches a barcoded tag to the cleaved ends – 96 unique barcoded tags are provided
- Barcoded samples are pooled and cleaned up prior to the addition of rapid sequencing adapters
- Fragment lengths are a result of the random cleavage

Which DNA kit?

A choice of library preparation kits to suit your specific requirements – offering the facility to sequence any length of DNA (from short to ultra-long) and multiplexing options for maximum data generation at the lowest cost per sample.

Use for...	Ligation Sequencing Kit (Q-SQK-LSK109)	Rapid Barcoding Kit 96 (Q-SQK-RBK110.96)
Prep time	60 mins	<60 mins
Input amount	1,000 ng dsDNA	50 ng gDNA (>30 kb) per sample
Fragmentation	Optional	Transposase based
Read length	Equal to fragment length	Random distribution, dependent on input fragment length
PCR required	No	No
Multiplexing options	Up to 24 samples per run (Native Barcoding Expansion packs required)	Up to 96 samples per run

Also available:

- Native Barcoding Expansion 1-12 (Q-EXP-NBD104)
- Native Barcoding Expansion 13-24 (Q-EXP-NBD114)
- Flow Cell Wash Kit (Q-EXP-WSH004)
- More Q-Line kits coming soon

GridION Q

A locked-down version of our flexible, high-throughput benchtop system with integrated compute.

With the capacity to run five independent flow cells, the GridION Q offers the same flexibility and specifications as the established GridION platform, but with fixed software and chemistry updates – allowing users to set up robust, in-house validated sequencing workflows. Integrated high-performance compute alleviates data analysis bottlenecks.

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



Five flow cells can be operated individually or together

Onboard data analysis offering real-time local analysis

Sequence up to 96 bacterial or viral samples in a single run

Low-pass human genome coverage

High-resolution, targeted characterisation of SVs, repeats, SNPs, and phasing

Built-in methylation calling*

Wash and reuse for multiple successive runs with Flow Cell Wash Kit



Specification

Weight	Size
14.4 kg	W 370 mm H 220 mm D 365 mm



*Methylation calling is enabled but not currently covered under the ISO 9001:2015 manufacturing process (see page 16).

GridION Q purchase plan



• GridION Q device

• Flow cells

• Sequencing kits

Remote Installation Assurance

Licence and warranty[†]

Q-Line Service Plan[‡]

CapEx*

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Included

12 months

12 months

Additional Q-Line support

\$93,250

* Device purchase
[†] Extended warranties available
[‡] Subsequent charge \$5,000 per annum (see page 18 for more information)

A wide range of training options are available, for more information visit nanoporetech.com/services.

All information correct at time of publication. May be subject to change.

Product specifications

GridION Q*

- Up to 5 individually addressable flow cells
- 1 min – 72 hour run time
- GPU-based compute enabling real-time basecalling alongside additional analysis

Power requirements: 650 W

Storage: 4 TB SSD

Memory: 64 GB RAM

Weight: 14.4 kg

Dimensions: W 370 mm, H 220 mm, D 365 mm

ISO 9001:2015 certification

The manufacturing process for all Q-Line devices and consumables has been certified to the ISO 9001:2015 standard. The process includes verification of basecalling (standard nucleotides), sample demultiplexing, and output of FASTQ files.

The calling of non-standard nucleotides (e.g. methylated bases), reference alignment, and the use of downstream analysis tools are enabled but not verified.† Contact your sales representative for more information.

† Verified calling of base modifications coming soon.

Flow Cells

- 1 min – 72 hour run time
- Typical data output: 15–35 Gb†

* Standard computer monitor, keyboard, and mouse required.

† Actual output varies according to library type, run conditions, etc.

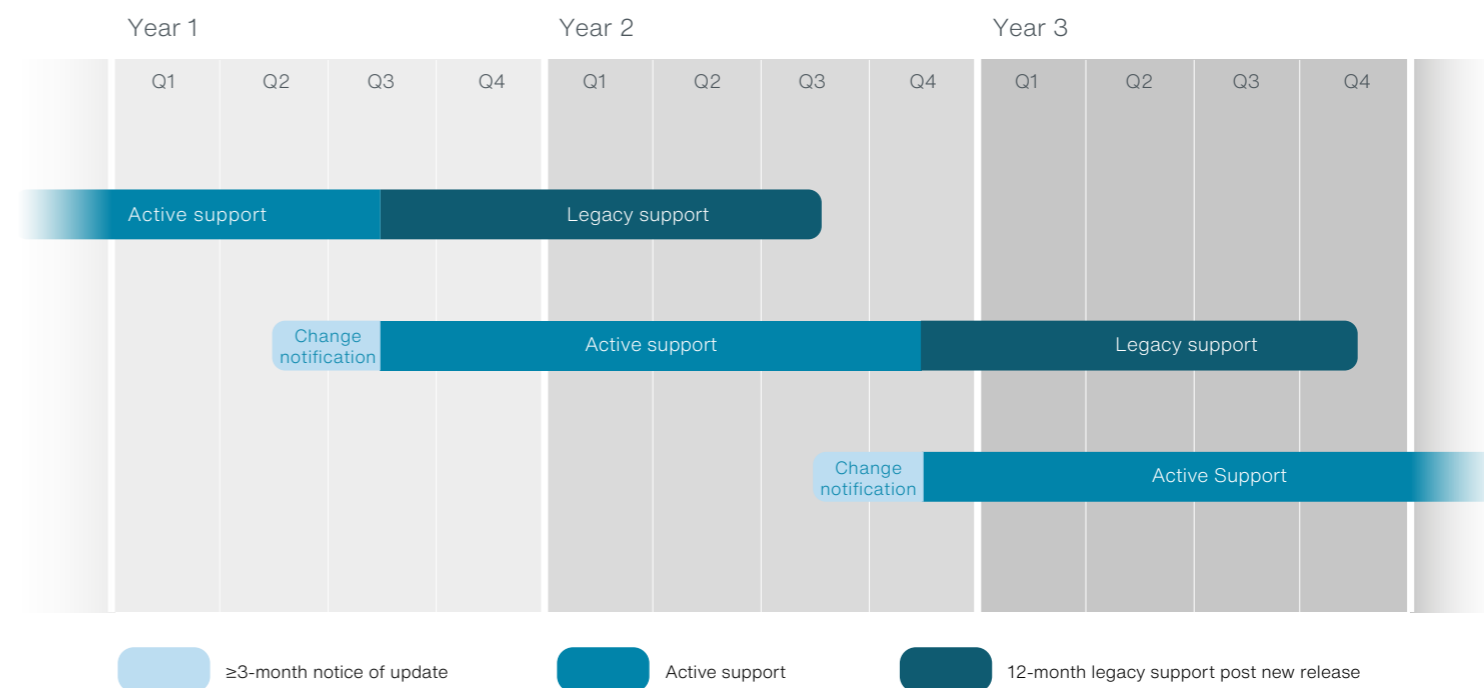


Clearly defined product update path

Q-Line products benefit from extensive testing in the field prior to release.

Q-Line will deploy versions of kits, flow cells, and software that have already been extensively used by the Nanopore Community as research-grade products. Users can test out assays on Oxford Nanopore research products and use the Q-Line roadmap to identify when specific features will be frozen and implemented.

The MinKNOW™ operating software version and incorporated basecaller, plus all consumables, are fully supported for at least 12 months post device purchase, reducing the requirement to revalidate routine workflows (see figure).



Schematic for demonstration purposes only, actual timings of releases may vary.

Rapid access to comprehensive support

All GridION Q purchase plans provide comprehensive and rapid support, enabling confident integration into routine workflows. Our expert support team are available 24 hours a day, 5 days per week.

Installation Support

- Customer project discussion to optimise experimental setup
- Remote walk-through and an overview of nanopore sequencing with Q&A
- Remote installation and configuration assistance
- Remote platform QC check

On-demand Technical Support



First response
within 4 hours
(Monday-Friday)



Resolution time
within 6 working days
from initial contact



Device replacement
for unresolved cases
within 7 days of fault
being confirmed

Qualification of Q-Line device installation, operation, and performance can be easily achieved using our simple step-by-step guide. Alternatively, the full IQ/OQ/PQ procedure can be performed on site by a fully trained and experienced Oxford Nanopore specialist.



Installation qualifications (IQ)

- Correct delivery of device(s)
- Suitable device location
- Adequate electrical supply
- Acceptable environmental and safety conditions
- Appropriate connection to device peripherals



Operational qualification (OQ)

- Correct electrical operation
- Functional internet connection, network settings, and system setup
- Hardware check to validate correct operation all flow cell positions and software



Performance qualification (PQ)

- Run lambda control to assess device performance. Recommended on initial setup and after significant changes (e.g. software update, implementing automation, new technician onboarding)
- Check reagents, instrument, flow cell, and software performance

For pricing of Oxford Nanopore provided device qualification, visit store.nanoporetech.com.

All information correct at time of publication. May be subject to change.

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BR_1079(EN)_V6_01Feb2024